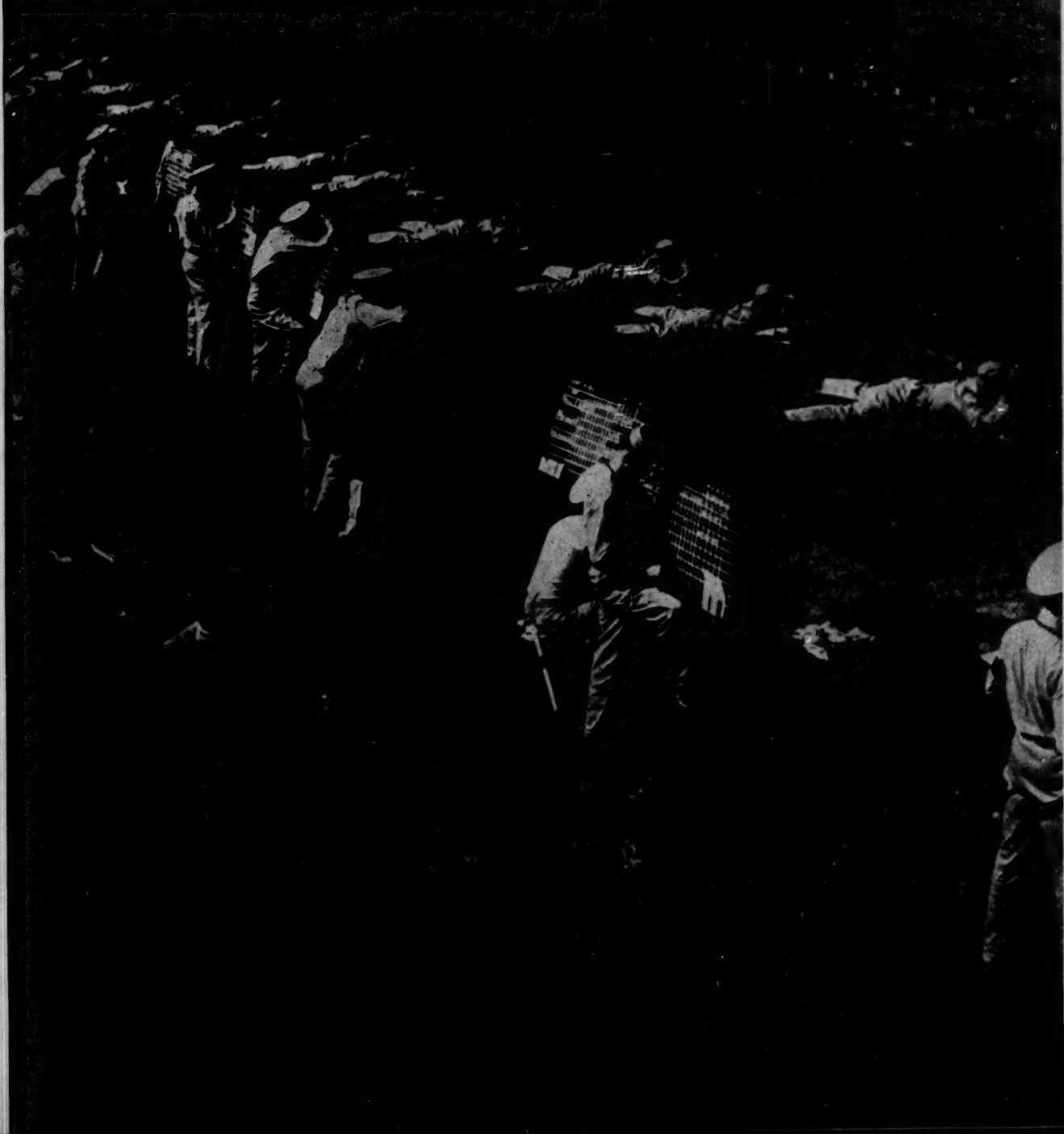


AUGUST
1949
thirty cents



MARINE CORPS GAZETTE



AUGUST 1949

CONTENTS

MESSAGE CENTER	2
THE MILITARY FUTURE OF THE HELICOPTER By Igor I. Sikorsky	10
THE MARINE CORPS AND THE HELICOPTER By 1stLt Roy L. Anderson	13
THE VROs Go on SC-99	20
IN BRIEF	22
REPLY TO SGT HOLT By Sgt Leland E. Dye, Jr.	24
MECHANIZATION OF THE AMPHIBIOUS ATTACK, PART II By LtCol Arthur J. Stuart	26
IN DEFENSE OF THE JOCKEY By Capt Joseph F. Donahoe	32
WHAT ABOUT LANDING TANKS? By Col Robert H. Williams	39
GOODBYE "LITTLE DYNAMITE" By LtCol Robert C. Hiatt	44
RESUPPLY BY AIR By LtCol Jacob G. Goldberg	48
THE LITTLE AIRLIFT By CWO R. W. Kaltenbeck	50
COASTWATCHERS By LtCol Robert C. Burns	53
PASSING IN REVIEW	60
AN ADULT'S FAIRY TALE By Capt Raymond L. Valente	IV COVER

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THIS MONTH'S COVER: As this is written, the annual Marine Corps matches are finished—until next spring, of course—and the shooters have gone home. At Quantico, on the morning of 17 June, the final stages were fired, and that afternoon the winners collected their medals. All went well, and everybody (except maybe a few who collected no medals) was happy. Cover shot was made by Colt's man Phil Roettinger (Major, USMCR), who also made enough shots with rifle and pistol to collect a few medals himself.

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THIS MONTH AND NEXT: If you happened to look at the masthead this month, you may have noticed that some of the old names are gone, with new names taking their places. The Editorial Board has taken on a couple of new members, and this is as good a time as any to welcome them aboard and to say "Good Luck" to Col Carson A. Roberts and LtCol Frederick R. Dowsett, gone to Glenview and Lejeune, respectively. Also gone (and quite suddenly so) is 1stLt Ray W. Arnold who was as efficient a business manager as the magazine could hope for. Lt Arnold's new station is the Ninth Reserve District Headquarters, Chicago, and his relief, 2dLt William L. Jesse, came over from the 22d Marines. By the time this issue appears, reliefs for the editor and publisher and managing editor should be on board; we'll give you their names as soon as we seem them in the flesh. No gamblers, we.

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Message Center

Sgt Holt Supporter . . .

DEAR SIR:

Today I received in the mail what is undoubtedly the best issue of the *GAZETTE* I have ever read. In fact, I have never seen a more balanced military periodical.

All the articles were fine. *Air Power and Air Bases* was good; as was *War of Words*; *Exhume the Gunnery Sergeant* was excellent—

BUT, it is to Sgt James H. Holt that I would take off my hat and bow low as to Mecca. Truly did the Moslem Prophet declare: "God is merciful!"

Sgt Holt is assuredly no iconoclast but a modern Demosthenes. Nor have I ever heard that Don Quixote's principles were something at which to jest or sneer.

Sgt Holt has hit so many nails squarely on the head that I wondered at first if his spec number were not 050!

I would like to see in the *GAZETTE* for the next issue a box score numbering the "yeas" and "nays" concerning this article that must inevitably and which undoubtedly will arise, thusly:

LEADERSHIP AND THE NEW MARINE CORPS

NAY	YEA
0	2

I hope that the Marine Corps will not fall into the error sagaciously pointed out by the greatest Teacher of all: "A Prophet is not without honor save in his own country."

SAMUEL L. GRIER,
2dLt, USMC.

ED.: As both Lt Grier and the editors anticipated, the replies to Sgt Holt's *Leadership and the New Marine Corps* which appeared in the June issue were both numerous and vehement. However, most of the comments were qualified and could not be classified as simple "yeas" or "nays." For a sampling of reader opinion read the let-

Each month the *GAZETTE* pays five dollars for each letter printed. These pages are intended for comments and corrections on past articles and as a discussion center for pet theories, battle lessons, training expedients, and what have you. Correspondents are asked to keep their communications limited to 200 words or less. Signatures will be withheld if requested; however, the *GAZETTE* requires that the name and address of the sender accompany the letter as an evidence of good faith.

ters which follow and *Reply to Sgt Holt* on page 24.

Uniforms and Sgt Holt . . .

DEAR SIR:

The cover picture on the June 1949 issue had a most depressing effect upon me, and I am sure upon many others. It also ties in, by contrast, with the excellent article by Sgt James H. Holt. My acquaintance with the Corps has extended for over thirty years, and has been in many capacities. It is beyond my comprehension that marines should be exhibited to the public, or should desire to appear in public, in utility clothes. For many many years we have managed to perform our duties, drill, train and otherwise exist in service uniform, especially in khaki. Why now, must we show ourselves in sloppy, mismatched, baggy rumped and ill fitting garments, which certainly cost the tax payer more per marine than decent khaki trousers and shirts? We used to have second best khaki for drill, maneuver and work, now even "Troop Inspection" has been held in utilities. A battalion of marines, in worn, stained and scrubbed khaki, with weapons clean and colors flying, is an inspiring sight as they march down a street or across a parade ground. The same men in utility clothes, as illustrated on your cover, might well be an auto mechanics convention. An excellent garment for combat does not mean it is an excellent garment for all other times. I dread the day when I shall be required to wear them in public, and I know that I shall feel shame, a shame which no incident which has previously occurred to me in the Corps has engendered.

Sgt Holt's article is excellent, but fails to state how the discipline is to be gained—or regained. It is my own conviction that what is lost in the Corps is the individual sense of responsibility. Formerly the individual felt this very strongly, the private was responsible for the good name of the Corps, for the cleanliness of his body and clothes, for his rifle and for his post. So on up. Now the slogan appears to be "Not my pidgeon." It's the police sergeant's pidgeon but not that of any other NCO or officer. It's the maintenance people to worry, not the line troops. It's the lieutenant's, or the platoon sergeant's, not the sergeant's pidgeon. Sometimes it's the lieutenant's pidgeon but not (believe it or not) the captain's! Or it's battalion's pidgeon—or post's—or *anyone* but *mine*! Let it go to H—, I'm not charged up with it.

What kind of a Marine Corps is that? The easy answer [is that] NCOs aren't what they used to be; NCOs won't do

continued on page 4



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Message Center

continued from page 2

their jobs! That is not the correct answer, however. NCOs don't do their jobs because they lack responsibility. It is ridiculous to allege that the men aren't as good as they were in my recruit days, because *I* know they are several hundred per cent better.

I can't agree with Sgt Holt in his suggestion that sergeants and corporals be relegated to "private's status." I suggest that sergeants and corporals be given appropriate jobs to do, and required to do them and be responsible for them. I well remember my duties as a corporal, which began in May 1920. To see that eight men got hair cuts, washed their feet, changed their "skivvies," cleaned their rifles, fell out for formations, and piped down at taps. As a sergeant it was my duty to see that the corporals performed theirs, and in addition it was my responsibility that three squads were properly drilled and trained. Gunnery sergeants were responsible for myself and a couple of other sergeants. The first sergeant was responsible for the company to the captain, the lieutenants were simply agents of the captain, with no responsibilities he did not assign them, and believe you me, the captain had a company he was *proud* to be responsible for. Back in 1940, I saw the Fifth Marines on parade and pass in review. From the sidelines you could see their colonel, Robert Blake, with a proud half smile on his face and his chest swelling with pride in them, as he took the salute. That chain of responsibility, reaching him, had tied him to that outfit and it was *his*, and he looked upon it and it was good! Now all through the Corps, are NCOs who were privates and corporals in that regiment (and other outfits as good). They have not deteriorated at heart, they know what is good, and most of them yearn for it. But—"It's not their pidgeon."

There is a lot of harping on tradition but little talk of any specific tradition. The only tradition the Corps has ever had is a tradition of getting a job done, and whether the way be SOP or eccentric, whether the individual be a character or an eightball, the tale is only a variation of the method in which a tradition was fulfilled. The tradition of the Corps was a tradition of responsibility. Drunk or sober, clothed or naked, equipped or not—the marine accomplished his mission.

We have a responsibility to our Corps' past history, we have a responsibility to ourselves, and the Corps today. Inculcate in the recruit, restore to officers and NCOs a new revitalized sense of responsibility and of pride in being what they *are*, and discipline will take care of itself.

In closing, again I say I agree with Sgt Holt all the way, and in addition believe that *responsibility* is the key he appears to be searching for.

FREDERICK W. HOPKINS,
MSgt, USMC.

continued on page 6



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Message Center

continued from page 4

Athletics and Sgt Holt . . .

DEAR SIR:

Even though many of us may not agree with several of the contentions in Sgt Holt's article, it's about time someone made many of us pause and think. He did bring out a number of good points. It should stir a great many of our officers out of their lethargy. Instead of living in the past, we might as well wake up to the present and stop kidding ourselves.

To make the Corps the organization it should and could be will take a great deal of hard work and honest sweat. I think, contrary to Sgt Holt, that we have made great strides towards our goal since the end of the war. However, it will take a lot of doing before we achieve our goal.

Too many of our officers expect that the individual marine should just naturally develop into a good one after he leaves boot camp. They become chagrined when he doesn't turn out as they think he should. Instead of pausing for a bit of candid self-examination or doing some investigating to determine if anything is wrong in their own bailiwick, these officers dismiss such thoughts and do nothing to constructively correct the situation. If a bit more research, proper indoctrination, and instruction were carried on as to the why's and wherefore's of such conditions, the situation would improve considerably.

The making of a marine doesn't stop after boot camp; rather it's just the beginning. The training and guidance he receives later help to further mold him into a good, mediocre, or below par marine. It's up to the officers and senior NCOs to get out and work with these youngsters and supply the necessary guidance. If we aren't willing to accept this responsibility and put forth extra effort and time, we don't rate the privileges that go with the rank we hold.

As for athletic teams being a waste of manpower during peacetime, I think the Sergeant misses a few points on that score. The prestige, publicity, development of team and competitive spirit and esprit de corps, and aid to recruiting gained by first rate Marine Corps teams is invaluable. They do much to attract athletically minded active young men to the Corps. These teams also tend to keep the Marine Corps prominent in the public eye in a day when public support is all important. Just ask any Marine Corps supporter among the Reserve or civilian populace what it means to be able to point with pride to the outstanding performances of present day Marine Corps teams in competition with other services. This more than compensates for any possible minute personnel shortage. The Sergeant does have a good point in that athletics for all should be encouraged among all hands and not only among those skillful enough to be on the unit teams. However, athletics among other less active organizations than FMF units should be even more encouraged. Athletics may not be the

cure-all for present day problems, but I have seen a well organized athletic program materially aid morale and reduce disciplinary cases. As a passing sidelight, more physical conditioning such as physical drill or combat conditioning exercises could well be reinstituted throughout the Corps. The physical condition of many of our officers and men will certainly bear this out.

DEAN N. McDOWELL,
Captain, USMC.

Out of the Jungle . . .

DEAR SIR:

The word has filtered down to the reserve program that the J T/O is on its way out and that two years experience has indicated a return to the infantry regiment. With changes being made, let's stop fighting in the jungles of the Pacific and return at the same time to the standard rifle battalion organization which the Army (operating some ninety divisions in all theatres of the last war as opposed to our six in the Pacific only) never gave up. Let's put the battalion heavy weapons company (give it three machine gun platoons, the 81s, and the assault platoon) back into the T/O, not because of slavish imitation of our Army friends but because the standard battalion machine gun set-up can do anything which our decentralized system can plus giving battalion a control of training and combat operation which we require a provisional organization to accomplish. Specifically why should we return to the weapons company machine gun organization?

1) All wars are not fought in the jungle with limited visibility and restricted fields of fire. In open country, the battalion commander will definitely need to build the framework of defense around guns and utilize their controlled fire under battalion for deep initial fires as well as on the FPL. By the same token, in attack or pursuit he will wish to use his guns as prescribed by FM 7-15 to assist the mission of the battalion as a whole. Such use calls for a battalion machine gun officer responsible to the battalion commander for the machine gun plan and the execution of that plan, and he needs a control group to help him. The commanding officer of the weapons company is the logical man to perform that duty yet he was completely left out of the G series T/O and re-appeared in the J only as the assistant S-3 (machine gun officer) with no assistants.

2) Coordinated use of guns in action requires a coordinated training program within the battalion and that coordination follows naturally from the platoons being in the same company and under a common commanding officer. To coordinate the training of machine gun platoons under our present system, the battalion commander must pull the platoons away from their companies to attend the battalion school. Under the command of their own rifle company commander but training and operating under the battalion machine gun officer who becomes responsible for their work, the machine gunners are now, in effect, serving two masters. Divided authority doesn't pay dividends in combat.

3) The old T/O provided the rifle company commander with three light guns to be used as he saw fit in the assault and to be coordinated with the battalion plan in the defense. If he needed additional machine gun strength on the offense and it fitted in with the battalion commander's plan, he could receive a platoon from the weapons company. As it stands now, he has a whole platoon which is more than the original theory of reenforcing the rifle platoon on the offense calls for, yet if the battalion commander takes the machine gun platoons to support a coordinated machine gun plan in the attack or pursuit, the rifle company commander is left with no guns at all. The net practical result is that the company commander has lost his three light guns in return for a full platoon which he will probably lose when the attack starts.

4) The psychological feeling of unit solidarity which comes from machine gun support of a rifle company by a machine gun platoon of that company is often held to outweigh the disadvantages of decentralized guns. However, along with the efficiency derived from the weapons company T/O, this feeling of solidarity can be achieved under a three machine gun platoon weapons company by habitually attaching a given machine gun platoon to the same rifle company; the men will get to know and have confidence in each other during battalion problems and in combat through constant association. This feeling existed during the last war between certain regiments and their supporting artillery battalions and though we have not yet put the corpsmen into the rifle companies, each rifle platoon has "its Doc."

5) Wars are fought by young and comparatively inexperienced company commanders no matter what the average age and experience of the captain in peacetime. A 22 or 24 year old captain has sufficient responsibilities toward his riflemen, mortar section, and for three light machine gun squads without adding the additional problems of a 55-man machine gun platoon to his permanent burden.

6) A battalion commander has, without calling for outside help, three supporting elements, machine guns, mortars, and the assault platoon weapons. All of these are essentially weapons of opportunity fitting into the mission of the heavy weapons company which the book describes as giving "continuous support and protection to the rifle companies." As things stand now, the mortars and the assault platoon are in headquarters (a unit which is administrative, not tactical) and the machine guns are split among three rifle companies; there are four units and four commanders involved with the battalion commander's own weapons when one would not only be sufficient but more efficient.

One school of thought holds that the machine gun is wasteful of personnel in modern war and that it could well be abandoned in favor of increased automatic rifle strength but that school has not yet triumphed over the old BMG; the guns are still with us and while they are let's give them a home. Let's put them back in the heavy weapons company where they can, in the words of FM 7-15, provide "strong fire concentra-

continued on page 8

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Message Center

continued from page 7

tion at critical points" and where the battalion commander can "during the action, anticipate, plan, and order the shifting or concentration of fires required by changing conditions" without the necessity of going through two or three already busy rifle company commanders. Let's get out of the jungle and back to principles.

HENRY APLINGTON II,
LtCol, USMC.

"Good Joes . . ."

DEAR SIR:

Congratulations on MSgt Crumb's *Don't Be A Good Joe* published in the May issue. Though this article is restricted to three types of COs, the current tendency to be a "Good Joe" is quite prevalent among the officers and men of the Corps today.

Most of us wish to be liked, respected and popular among

superiors and subordinates alike, but why jeopardize and disregard the aim of the Corps to continue its tradition as the most efficient fighting force in the world.

The officer who breeds contempt through familiarity in being a "Good Joe" is no better exemplified than the case where enlisted personnel were known to address the bearer of a gold leaf by his nickname, slap him on the back and request that he procure their drinks, in a public bar no less. This officer was finally apprehended playing dice in the company of enlisted personnel and suffered the resultant consequences.

Then there is the chap who "never put a man on report in his life," even though he witnessed numerous instances detrimental and prejudicial to the command. Those aware of this would continue to flaunt such authority as he had in his face and went on their merry way knowing they could get away with it.

Disrespect, insubordination and other humiliating infractions of authority are all MSgt Crumb's type of "Good Joe" can expect.

HENRY A. CHECKLOU,
1stLt, USMC.

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Cap Frames . . .

DEAR SIR:

Every time I am transferred and begin the task of packing trunks and suitcases, I wonder why the Marine Corps doesn't allow its officers to use the dress cap frame for *all* covers.

The advantages, of course, would be one less cap frame to buy and carry around, and a snappier looking cap for everyday use by field and general officers. A precedent can be found in the "scrambled eggs" worn daily by Naval officers of the ranks of commander and above.

The disadvantages? Can't think of any except the difference in color of the leather in the dress cap frame and that of brown shoes. But, if "regulation" brown shoes (*dark russet, dark brown mahogany, or cordovan color*) are worn, the difference in color is negligible.

C. F. McKIEVER,
Captain, USMC.

School for NCOs . . .

DEAR SIR:

I have had an idea stewing in my mind for some time so I finally decided to put it on paper and see if the GAZETTE would print it. My idea is a school for newly made NCOs. Only a small percentage of the marines receiving their warrants nowadays have had more than a few months (9 to 15) actual service which isn't enough to give him the experience a

man should have before acquiring a rate. The school I have in mind could be established on each post and large units (Division, Brigade) could have their own within their own unit. At the school a man would learn to drill troops (some of the present-day NCOs trying to drill a body of troops is a sad sight to see), stand corporal and sergeant of the guard, learn to give classes, how to give orders, what he can and can't do (some NCOs exceed their authority outrageously), and most important of all, learn to be a leader. All in all he would learn how to be an NCO. With qualified instructors a month should be sufficient. Classes could begin on the first of each month, enabling unit commanders to have their "students" ready. A man could be given tests and graded and the results used as a basis for his SRB markings, thereby giving him a little drive while he is in the school.

I've no doubt that this isn't a very original idea but I have never seen or heard of any school of this kind which I think would benefit many unit commanders and also the NCOs themselves. No doubt someone else has better ideas.

GENE HIBBERT,
Sergeant, USMC.

ED.: A centralized school for NCOs is a much-discussed possibility but the editors know of no official plans for such in the Marine Corps. Several foreign services have NCO schools and use them to advantage.



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Military Future of the Helicopter

By Igor I. Sikorsky

✦ HELICOPTERS IN GENERAL MAY BE REGARDED AS VEHICLES of transportation having the least number of limitations with respect to their uses. A ship or boat is limited to water, an automobile to a reasonable road and even the tank requires certain types of surface and is not able to traverse a real forest, steep hills, deep swamps, deep snow and a number of other surfaces. Finally, the airplane is free in the air but calls for huge well-surfaced fields for its take-offs and landings. Furthermore, the airplane is excellent and unparalleled with respect to high speed but it can not be operated below a certain minimum speed which, in most modern aircraft, is usually in excess of 100 mph. Then, too, the airplane is limited in its ability to operate in close proximity to the earth, particularly in mountainous country.

The helicopter, on the other hand, is totally free from every limitation of this nature. It can be operated from any small space where there is room enough to store

the aircraft. It can fly as low and as slow as it may be desired and it can actually follow any contour of ground over which it flies. It can stop in the air at any altitude at any time. Finally, by direct landing, or should this be impossible, by the use of hoisting slings, helicopters can contact and deliver or remove personnel and cargoes from virtually any spot on the surface of ground or water, regardless of practically any possible obstacles.

These characteristics will ascertain the usefulness of the helicopter for a vast variety of important military missions. It would therefore be right to state that, in evaluating the characteristics of the helicopter, we would seldom have to compare it with the efficiency or lifting capacity of other vehicles since most of the missions undertaken by the helicopter would cover such cases wherein no other vehicle would be able to render any service whatsoever.

In line with this discussion it is desirable to review,

◀ **VS-300, with Igor Sikorsky at the controls, was first successful helicopter in Western Hemisphere.**

briefly, the performances that could be expected from helicopters in the near future.

(1) *Speed*—I believe that the most practical types of helicopters will remain in the reasonably slow category of, say, between 100 and 150 mph operating speed. In special cases where much greater speed would be necessary, we may expect the appearance of the so-called "convertible helicopter;" i.e., a craft that takes off as a direct-lift and, while under way in the air, becomes in one way or another transformed into a plane. Such an aircraft is entirely feasible and velocities up to 300 or 400 mph or even more can be expected from it. However, it will always remain considerably less efficient than either the pure helicopter or the pure airplane and therefore its use will probably be limited to special cases where speed, combined with helicopter characteristics, is an absolute necessity.

(2) *Size*—I believe that helicopters with a gross weight of 50,000 lbs. and a lifting capacity of between 30 and 50 per cent of this figure can be designed and constructed in the near future. The higher of these two figures could be obtained with jet-driven helicopters that may be expected to have a structural weight of about one-half or even less of their gross weight. However, jet-driven helicopters will, in all probability, be practical only for very short ranges of, say, up to a 50-mile round trip. For much longer ranges, conventional helicopters, with engines or turbines supplying power which is transmitted by adequate reduction gears to the rotors, will be more efficient. As time goes on, still larger helicopters could be produced and it is too early at present to determine any limit in size.

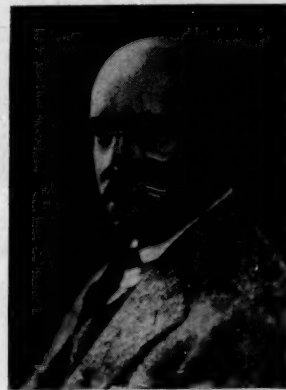
(3) *Range*—With respect to flight range we can visualize, roughly, three cases. For shortest distances, the jet-driven helicopter may have its advantages, although the conventional engine-driven helicopter will undoubtedly also be used extensively. Further intensive experimentation is still necessary to determine the practical value of the jet-driven machines. For medium ranges of from 100 up to 1000 miles total distance and eventually probably up to 2000 miles, the conventional engine-driven helicopter will prove best. For much longer ranges, such as distant rescue missions, it is possible to visualize some assistance being given the helicopter. This may be in the form of refueling in the air, refueling by picking up fuel supplies dropped by parachutes from fixed-wing aircraft or, finally, by towing the helicopter. A well designed power-driven helicopter may be

towed quite satisfactorily, in which case its engine would be stopped and the rotors autorotating. In such manner the craft may be brought to its destination, accomplish its mission, and then it may either return under its own power, having saved, roughly, half the distance of flight, or it may re-establish contact with the towing plane and be towed back. Further study is needed to determine whether the jet-driven helicopter would prove satisfactory for towing as the jets at the end of the rotors would offer substantial resistance which may, to some extent, impair their autorotation characteristics.

Taking these facts into consideration, it will be possible to outline briefly some of the military missions which the helicopter could accomplish.

(a) The first job of the helicopter would be for communication purposes, covering short and medium distances, under the greatest possible variety of conditions. This would include communicating between airports and various places where men, equipment or cargoes would have to be transferred. It would include all types of transportation and messenger services which, as a rule, would be much quicker than by any other means and which frequently may be the only means of traveling quickly between any two points.

(b) Helicopters would undoubtedly prove very valuable for observation and fire control under a great variety of conditions. They will eventually become necessary equipment for every artillery unit, every motorized division, every group of tanks, etc. In such cases, helicopters would always remain with the unit they would

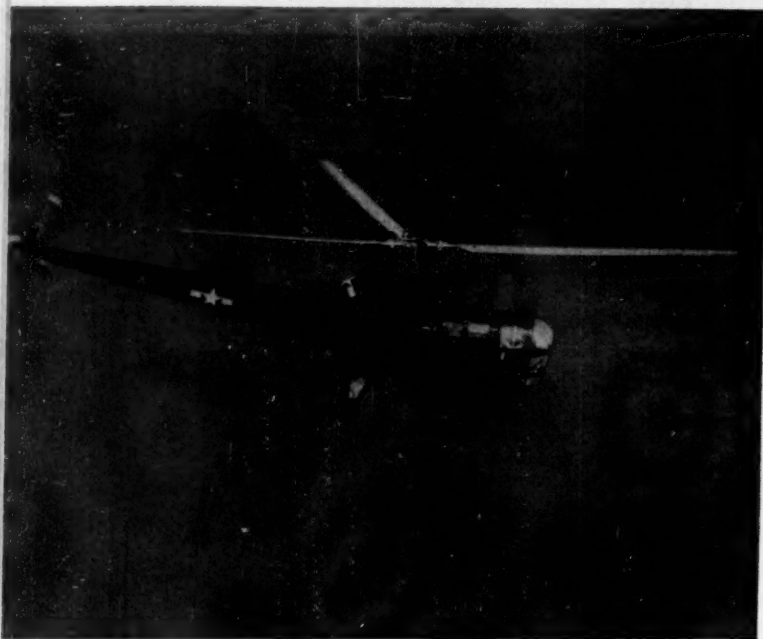


Igor I. Sikorsky, a native of Russia, received his engineering training in Paris and at the Mechanical Engineering College of the Polytechnical Institute in Kiev. In 1909 he began his work in aviation by designing and constructing a helicopter with a motor of 25 hp.

This power plant, the best available, proved inadequate. In the following three years, Mr Sikorsky produced a second helicopter (which also proved the need of larger power plants) and six different types of airplanes. He arrived in the United States in March 1919 and became world famous as a designer of large multi-engined airplanes and flying boats, before returning in 1939 to his helicopter studies.



Army R-4. Still young, the helicopter has proven its value as an instrument of rescue and evacuation.



ABOVE: Navy Sikorsky HO3S-1 is currently used by Marines. BELOW: Army R-6 two place helicopter.



serve and hence be available always. The question of their vulnerability remains open as yet. While their slow speed is a disadvantage, yet their ability to follow closely the ground contour, ability to move in behind hills or groups of trees, ability to change rapidly the direction of flight and to descend vertically will, in all probability, compensate for that disadvantage and cause them to become a thoroughly practical instrument for such work.

(c) While the helicopters are still young, yet their outstanding services as an instrument of rescue and emergency evacuation have already been proved without a trace of doubt. It can be rightfully stated that, for such missions, helicopters would, in most cases, prove to be the most convenient and most comfortable for the injured and, in many cases, would prove to be the only craft capable of accomplishing a rescue.

(d) One of the most important helicopter uses in the future would be for landing operations. In most cases it would obviously be preferable to use helicopters of medium or large size that could carry a substantial number of men with their equipment, or carry pieces of artillery, motorized vehicles, tanks, and other military loads. In the present era of atomic bombs, helicopters may be particularly valuable in that they would be able to carry out such operations with vessels moving at normal speed far out at sea, thus avoiding the dangerous concentration of vessels and the need of their being stationary. A further great advantage would be the possibility of landing men and equipment, not on a few appropriate beaches which, as a rule, would be watched and protected, but inside the country, always choosing the exact time and spot and therefore having the benefit of initiative and surprise.

IN CONCLUDING, I must stress the fact that the above examples outline only a small part of helicopter potentialities. As time progresses and further techniques of operation become developed, parallel to the improvement of the helicopter itself, a large number of other missions which the helicopter would be able to accomplish, will become established. In particular, the helicopter would prove extremely valuable for a number of missions inside the country in the event of atomic attack upon any cities. In this case, when automobile traffic would inevitably become blocked, the helicopter would be the only vehicle capable of reaching the heart of the stricken city to carry in police, medical personnel necessary, etc., to re-establish order, render help and to carry out the injured.

In general, I am confident that the modest new aircraft which, as we already know, has the minimum amount of limitations would also prove to be the aircraft with the nearly unlimited amount of possibilities.

US MC

The Marine Corps and the Helicopter

By 1stLt Roy L. Anderson

IN JUNE, 1947, THE ORGANIZATION OF A MARINE helicopter squadron began. Pilots who were interested in helicopters were selected from two graduating AWS-JC classes. Arrangements for pilot training were made with VX-3, the Navy helicopter training squadron, at Lakehurst, N. J., and the first Marine pilots to be trained were ordered to VX-3 on 15 August. They returned to Quantico on Thanksgiving Day. Col E. C. Dyer was the first commanding officer of HMX-1—the official designation of the new squadron. Mustering five pilots and two enlisted men, it was commissioned on the first of December, 1947. By 27 February, 1948, the group had grown to nine officers and 18 men, and on the following day Col Dyer and Maj Riley flew the first two Marine helicopters (HO3S-1s) to Quantico from Lakehurst, N. J.

As is typical with new equipment, people were interested and duly impressed by the newness of the machine. Demonstrations, rides, lectures, explanations, and displays were given to those who were interested. The Commandant of the Marine Corps outlined a tactical and operational developmental program. Troop-transport and observation were primary; the various other capabilities being secondary. During the following year the arrival of three more HO3S-1s, five HRP-1s, and one HTL-2 furnished HMX-1 an excellent sampling of available production aircraft with which to explore the new mechanism's capabilities.

The helicopter field, today, roughly parallels pre-World War I fixed wing aviation. A few militarists of that time realized the possibilities of the airplane just as a few realized, prior to World War II, the capabilities of the helicopter. Barely did the helicopter get into the last war. A limited number were used in the Philippine area by the Army as rescue vehicles, and proved very satisfactory.

The helicopter is a piece of machinery adaptable to more military uses than any other single item of equipment. Observation, communications, troop-transport, resupply, and evacuation are only a few of the missions that can be performed by the helicopter as well as, or better than, present methods.

Tactical tests by HMX-1 are proving the importance of the helicopter as an amphibious weapon. It is designed to be operated aboard carriers, and the blades can be

folded for hangar deck stowage. Because of the helicopter characteristics, landing and launching operations can be conducted simultaneously, or successively as desired. Field tests have shown that a platoon can be landed, assembled, and the aircraft clear of the landing area in less than thirty seconds. This is impressive, for the troops are flying at 80 mph just above the tree tops, and in less than a minute, are landed and assembled ready to thwart an attack, seize a tactical locality or observation point, or perform any of numerous missions. Operations such as these can be conducted from ship or shore bases as the tactical situation demands.

Since this triphibious jeep knows few terrain obstacles, the personnel and equipment transfer from ship to shore by helicopter would obviously dispense with the landing beaches. Consequently, the enemy must expand his defense to include all level terrain large enough to land a helicopter, or maintain a mobile defense large enough to combat any force that might be landed. This would be a disconcerting thought to an enemy commander because the first point of activity by the helicopter could be merely a feint, with this highly mobile force then moving to attack its primary objective.

THE HRP-1 (Piasecki) is a dual rotor configuration with a gross weight of 6900 pounds, a useful load of 1900 pounds, or two pilots and eight passengers. Its long fabric covered fuselage is the reason for such names as the "Sagging Sausage" or the "Flying Banana." It is used for supply and troop transport.

The HO3S-1 (Sikorsky) is a single main rotor configuration with a gross weight of 4985 pounds, a useful load of 1180 pounds, or a pilot and three passengers. It is used for liaison and observation.

The HTL-2 (Bell) is also a single main rotor configuration. It has a gross weight of 2160 pounds, a useful load of 590 pounds, or a pilot and one passenger. Its bubble nose and straight tail boom make it look like some large mechanical dragon-fly. It is used for observation, naval gunfire spotting, and artillery spotting.

1stLt Roy L. Anderson is a pilot (and assistant engineering officer) with Marine Helicopter Squadron One. This is his first article for the GAZETTE.

Observation is second only to men with rifles, militarily speaking; and to increase observation, commanders have utilized every conceivable piece of military equipment. The Marine Corps' most widely used observation airplane is the OY type, a small versatile light plane with no armament. It is a two seat affair with a pilot and an observer. The general requirements of observation aircraft are duration, visibility, and, of course, the necessary communications. The general missions of observation aircraft are artillery spotting, naval gunfire spotting, photography, message carrying, and terrain reconnaissance.

The helicopter is equal to the OY in all these prerequisites and better in most; plus having its unique characteristic of vertical flight which eliminates the need for prepared landing fields. Also the ability to climb up and spot the "splash," and then duck behind cover until the next round is on the way, is an important feature when considering the rather high casualty rate among forward observers. The personal conduct between the observer and the artillery unit is also increased for rotary-winged aircraft can be operated from battery or command post positions.

Another adaptation is terrain appreciation—especially useful, because the commander must know the ground in order to fight. The helicopter provides a type of reconnaissance that cannot be equaled by any other machine. The ground can be studied from any altitude, limited speeds, and any position. A ten minute reconnaissance by helicopter is equivalent to a two hour road reconnaissance, and gives the commander a much better over all picture. The area is presented as a large mosaic and perception from any desired angle will acquaint him with possibilities that might be realized only after long walks over the terrain. Routes of approach, defense positions, reserve positions, supply dump locations, communication routes, and many other requirements necessary to set up a position, can be studied and located by helicopter reconnaissance. These missions can be performed either in the attack or defense, and are limited only by the helicopters vulnerability to small arms fire.

The helicopter is also the ideal machine for liaison between units or headquarters.

☛ COMMUNICATIONS play a vital part in all decisions and the rapid establishment of communications is an obvious necessity. As a wire-layer the helicopter combines all the desirable features of man, horse, and jeep. Tests by HMX-1 have proven this. For instance, with the high speed dispenser, wire can be laid at speeds up to 100 miles per hour. It can be laid across bogs or swamps, cliffs, or reefs, and terrain accessible only by air.

The most practical wire dispenser is the internally wound high speed dispenser. It contains approximately

3600 feet of wire and weighs about twenty pounds. This high speed wire is internally wound and feeds from the center of the spool out so there is no rotational difficulty encountered as with the externally wound wire reel. The HO3S-1 can easily carry ten of these reels, and by attaching the standing end of one reel to the paying end of the succeeding reel the entire load can be laid as one continuous line or numerous short lines. By using sound power phones, air to ground communications can be maintained throughout the flight period.

A dispenser is being built to mount four DR-4 reels (W-110) externally on the helicopter. These reels weigh 82 pounds and contain one-half mile of heavy field wire. Two, three, or four lines can be laid simultaneously with this mount; however, only one mile of wire can be laid without landing and splicing the first mile to the second.

Under battle conditions quite probably the helicopter could not lay wire to units lower than the battalion, but lateral lines from the battalion and lines to higher units could be laid with ease. These would include shore party lines, supply dump lines, hospital lines, collecting station lines, and the numerous others necessary in a fast moving operation. Instead of sending a repairman to find a break in the line, a new line could be laid before the repairman could get out of sight of the command post.

☛ THE ADAPTATION of the portable ground radio to the helicopter is amazing in its simplicity and gratifying in results. An external collapsible aerial was made to attach to the planes ZB antenna outlet. The SCR-300 and the SCR-619 were placed in the back of the airplane, and by connecting either radio to this antenna outlet the installation was ready for operation. The SCR-300 at an altitude of one hundred feet was good for five mile transmission and reception, at five hundred feet it operated satisfactorily up to fifteen miles. The SCR-619 produced generally the same results. The antenna used in both cases was the same, and had not been tested for loading. The technicians with the set, however, felt that with proper antenna loading, correct dipole lengths, and proper resistance the range could be increased considerably. Installation time was approximately ten minutes as tested, but with proposed aircraft modification, the installation would consist of attaching the external antenna lead to the set and the SCR would become airborne. This is important since any organization with this type of radio could immediately adapt its radios to the helicopter, conduct an aerial reconnaissance, and send instructions from this desirable vantage point.

With its capabilities the helicopter can be adapted to numerous rescue missions. These include evacuation of wounded, rescue of isolated units, medical resupply, prisoner of war transportation, intelligence studies, etc. With a platform on the stern of a hospital ship, wounded

could easily be transferred from field hospitals directly to the hospital ship, or to an airfield for air evacuation.

At present the idea of mechanized defense by helicopter sounds a bit far fetched, (so did jet propulsion a few years ago) but it is a possibility and deserves investigation. By mounting recoilless weapons and waiting until the armor is committed under certain conditions, the helicopters could repulse or seriously hamper an armored attack. It could be used for the transport of mobile recoilless antitank weapons. Instead of attaching antitank weapons to lower units, they could be retained at division and then moved *en masse* via helicopter when an armored attack was imminent.

Each helicopter in HMX-1 is equipped with a hydraulic hoist and one-hundred feet of cable. This hoist is the basis for all rescue recoveries. One item developed by HMX-1 is a collapsible litter that can be carried inside the airplane, it serves also as a cargo carrier. Another is an automatic unloading hook that is attached to the hoist. The cargo is loaded onto the hook and the weight of the cargo compresses a spring attached to an ejector hook. When the cargo reaches the ground and the weight is taken off the ejector hook, the compressed spring automatically throws the line attached to the cargo clear, thus freeing the hoist line. Cargo in this way can be lowered into trees or onto terrain unsuitable for landing with no one on the ground to detach the hoist line.

A loud speaker system mounted outside the helicopter for personnel direction has numerous other uses from psychological warfare to advertising athletic events. An instrument installation including an artificial horizon and directional gyro equip the machine for instrument flight, and modifications to the aircraft itself relieve maintenance difficulties and increase efficiency.

THE MARINE CORPS definitely has use for two types of helicopters. One should be a small two or three place high performance type, for observation, reconnaissance, and liaison. The other should be a troop-transport type, for use in amphibious troop and supply landings. It should be large enough to carry an integral troop unit, probably a squad, perhaps eventually two squads, or a platoon. This transport should have quick folding blades for carrier elevator and hangar deck stowage.



A Marine pilot, injured in emergency bailout, is rescued by Coast Guard helicopter. Ground rescue would have required cutting path through dense swamp undergrowth.

Design must lessen maintenance difficulties, and include the necessary carrier modifications. Parts procurement and aircraft standardization should be revamped for availability increases.

The tactical requirements necessary for transport and landings by helicopter include: terrain in the objective area suitable for helicopter landings, helicopters suitable for the job intended, and local air superiority. Troop indoctrination must be instituted and equipment adaptable to this type of operation procured.

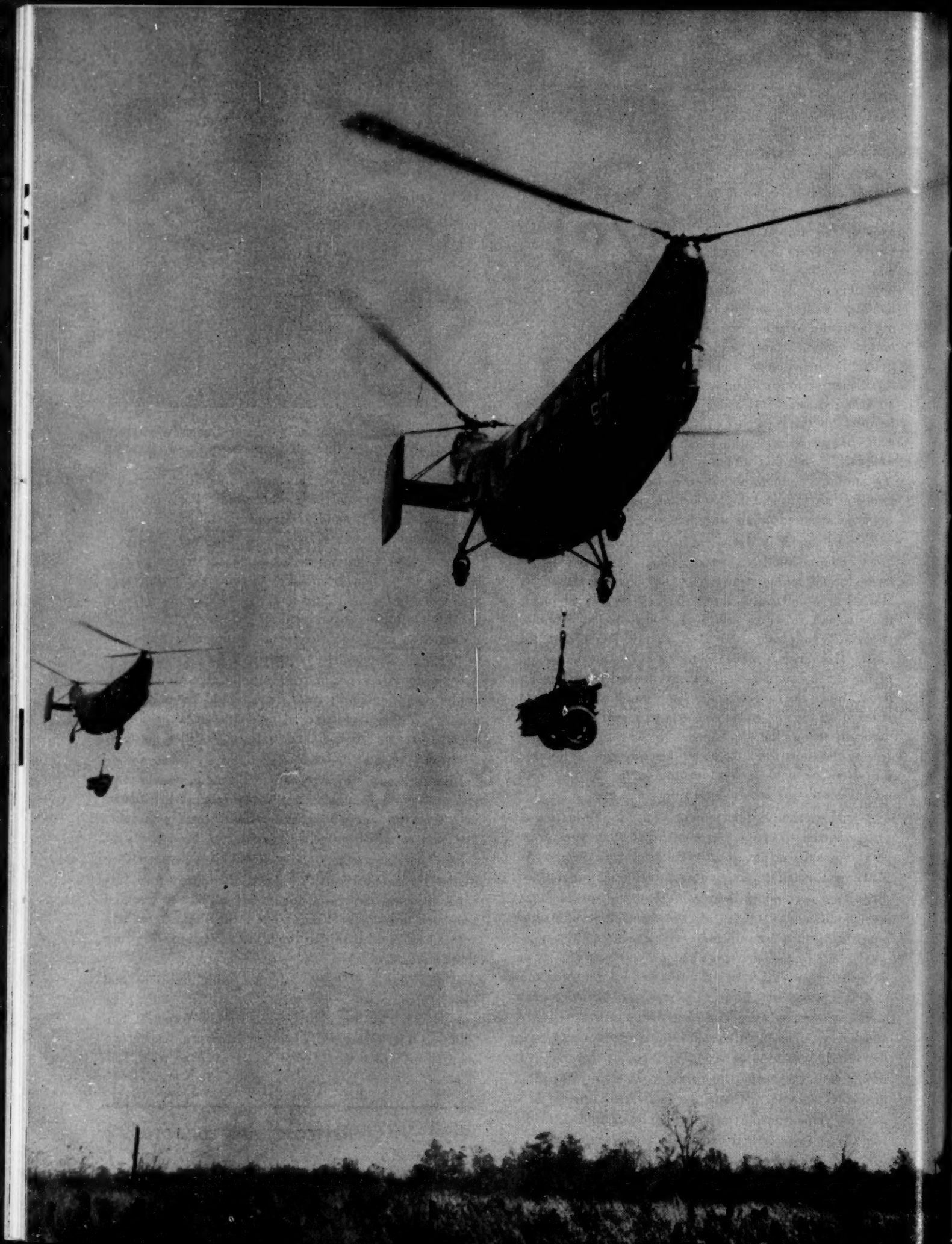
Operational bases would be initially aboard ship, and as the operation progressed, bases would be established ashore. If the plan were to establish an airhead ten, twenty, or fifty miles inland, service facilities must be established in both places.

Prototype and drawing board helicopters include ram-jet, and pulse-jet machines; 40,000 pound helicopters with three or four rotors, and rotor systems with four, five, and seven blades.

The helicopter is potentially one of the greatest utility weapons ever placed in the hands of military men. Its capabilities are the reason for its adaptability to so many unrelated military problems. The evaluation of the helicopter as it is adaptable to amphibious warfare will prove these statements.

If the Marine Corps is supplied with machines that satisfy amphibious requirements, we will not only presently be, but continue to be the world's foremost amphibious specialists. But—will enough men realize this in time to supply the Marine Corps with the right helicopters?

USMC



Demonstration

WHEN ABOUT 60 SENATORS AND REPRESENTATIVES visited Quantico on 9 May, it gave the Marine Corps Schools a chance to demonstrate what was being done to refine amphibious techniques. Highpoint of the demonstration was the use of troop-carrying helicopters. The Marine Corps has been experimenting with this possibility since 1946, but the experiments were strictly classified and very little emerged in print until the show was put on for the Congressmen.

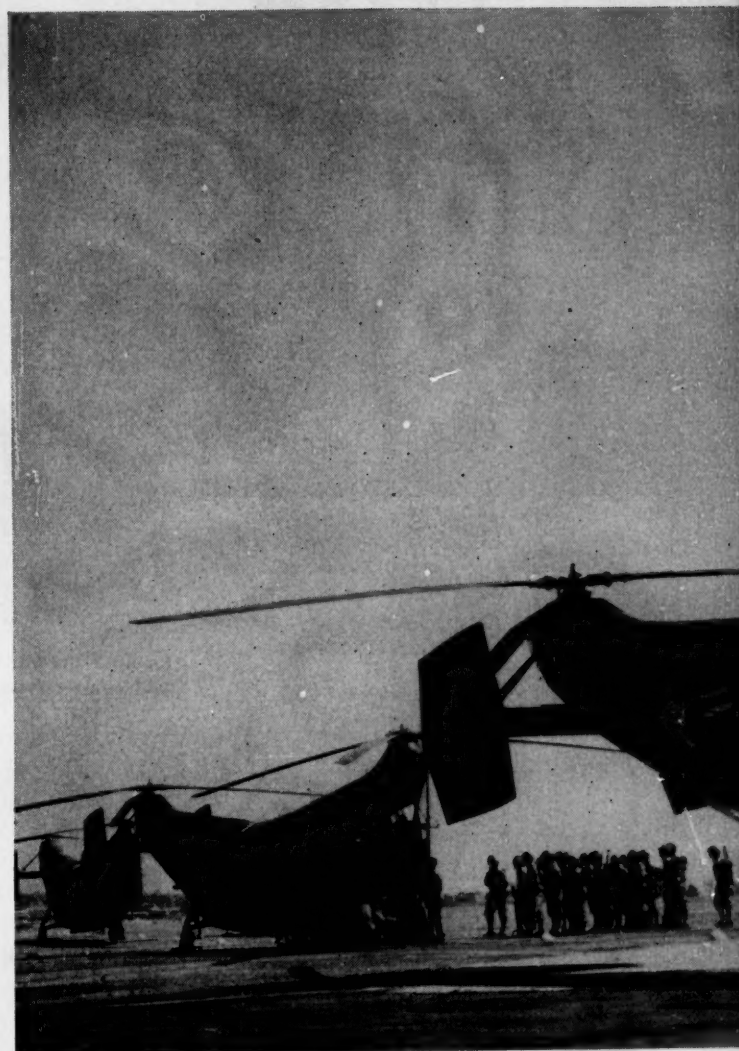
Briefed by a running commentary, the visitors saw a platoon of marines take off in eight HRP-1s from a "carrier deck" painted on Quantico's Turner Field. Then, after lunch, the Congressmen saw the same platoon landed in a "combat area" (theoretically 70 miles away) to assist in the reduction of a fortified position.

It was explained to the group that helicopters were faster and might prove less vulnerable than landing craft, that they could jump over tough beach defenses and land their loads just where they are needed.

The 'copters were flown by HMX-1; the troops were from the 22d Marines. In addition to landing assault marines, the "Flying Bananas" showed that they could deliver supporting weapons and supplies, and, on the return trip, evacuate wounded.

Unlike a conventional transport, a helicopter can carry exterior loads such as these 75mm howitzers.

Below: Troop load of Piasecki HRP-1 "Sagging Sausage" is limited to one ton or seven marines with equipment.



Above: For demonstration purposes Turner Field was lined off to simulate carrier deck. **More pictures**

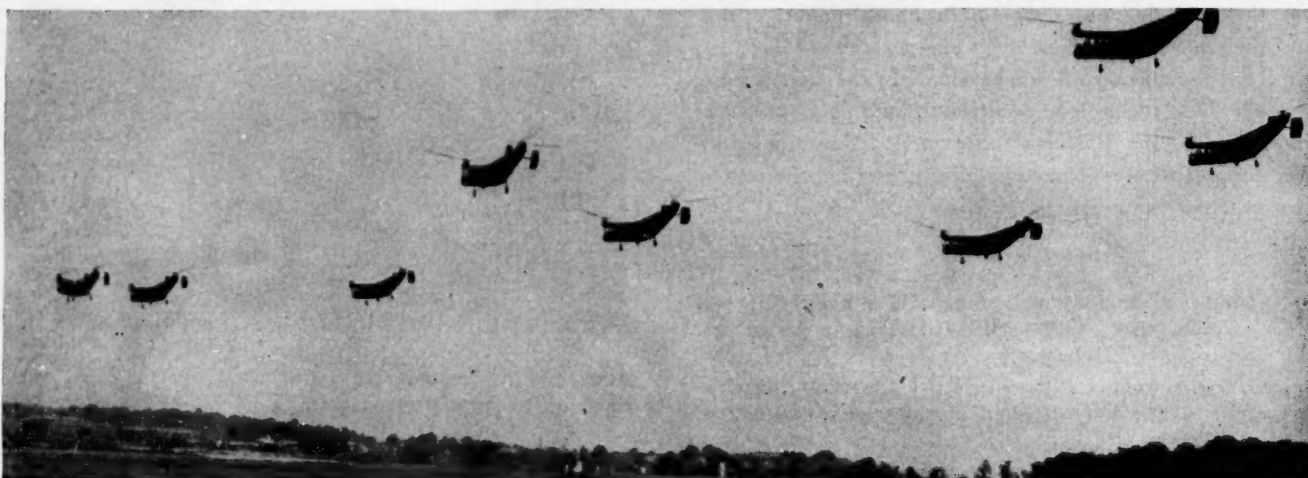




Passenger seating is much the same as in other troop-carrying planes. Both Piasecki and Sikorsky are planning new 'copters to carry 35 equipped marines.



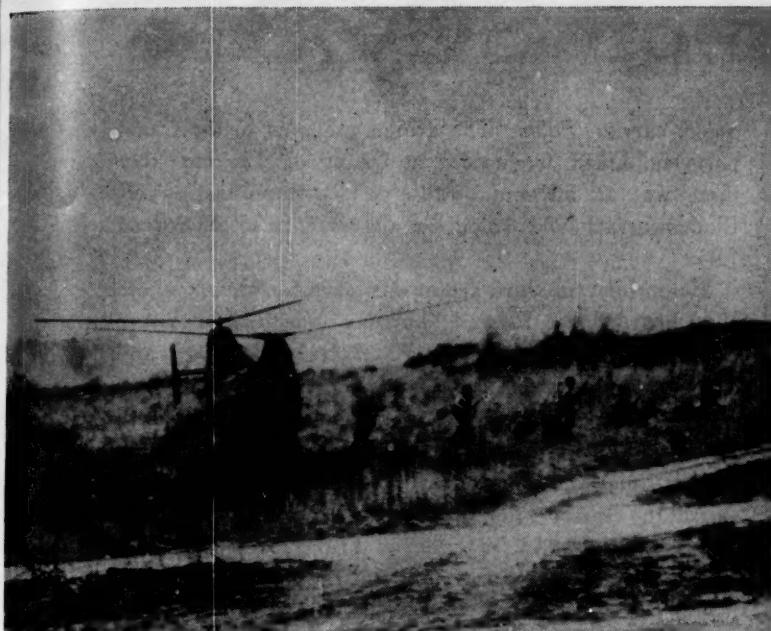
Ground crews, wearing different colored sweaters to indicate their function, use carrier-type signals to direct the helicopters' take-off from the "deck."



Above: Clear of Turner Field, the squadron of eight Piasecki looks much like a swarm of hovering dragon flies.

Below: The vertical-descending aircraft can deliver their combat loads at almost the precise point they are needed.





Troops deploy as rifle squad. Helicopters can land their load, take off, and be out of small-arms range in very few seconds.



Pack howitzer, with a well-trained crew, goes into action almost as soon as its cargo-carrying sling is removed.



The pay-off, as in all battle, is the final assault that carries the "enemy-held" strong point. Marine assault

squads are highly integrated teams. With helicopters to air-lift them, they will get there faster and closer.

The VROs Go on SC-99

✦ THIS WAS THE THIRD YEAR FOR SC-99 (OPERATION Packard III). Nominally a problem of the Senior Course of the Amphibious Warfare School, it also involves the Junior Course, the Basic School, the Communication Officers' School, the Marine Corps Schools staff, and a skeletal Navy task force. This year 47 volunteer reserve officers, 12 of them majors, the rest captains, took part as observers.

The problem, which is the culmination of the Marine Corps Schools' winter session, represents an assault by an amphibious corps landing on the Onslow Beaches at Camp Lejeune. It gives the schools a chance to tie together everything they have taught for the year and present it on every level from corps down to battalion. For the VROs attending it was a dramatic brush-up on current amphibious techniques. They themselves were a cross-section of Marine wartime amphibious experience—officers who filled every sort of billet and who fought in every major action from the first landings in the Solomons to the final operations at Okinawa were to be found in the group.

The schedule for the VROs actually began on Monday morning, 16 May, when they reported to the Amphibious Warfare School—Junior Course at Quantico. The morning was spent in administrative details; during the afternoon and next morning they were given a blitz review in amphibious operations in general. Tuesday afternoon was an intensive briefing on SC-99.

Wednesday they were divided into three groups and assigned to two transports, *Fremont* and *Bexar*, and one

escort carrier, *Palau*. The groups assigned to the transports embarked Wednesday at Quantico. The next day there was an air and naval gunfire demonstration off Bloodsworth Island which was observed from aboard an LST.

Meanwhile, the third group was taken to Norfolk where they boarded the *Palau*. Thursday morning they were conducted through the USS *Franklin D. Roosevelt* and LSD-5. Later in the day they were briefed on the characteristics and performance of helicopters by squadron officers of HMX-1, the Marine Corps experimental helicopter squadron.

All the VROs were present for the rehearsal of the corps landing at Little Creek on Friday, those from the *Palau* being flown to the rehearsal by helicopter. Afterwards there was a conducted tour of Troop Training Unit facilities at the base.

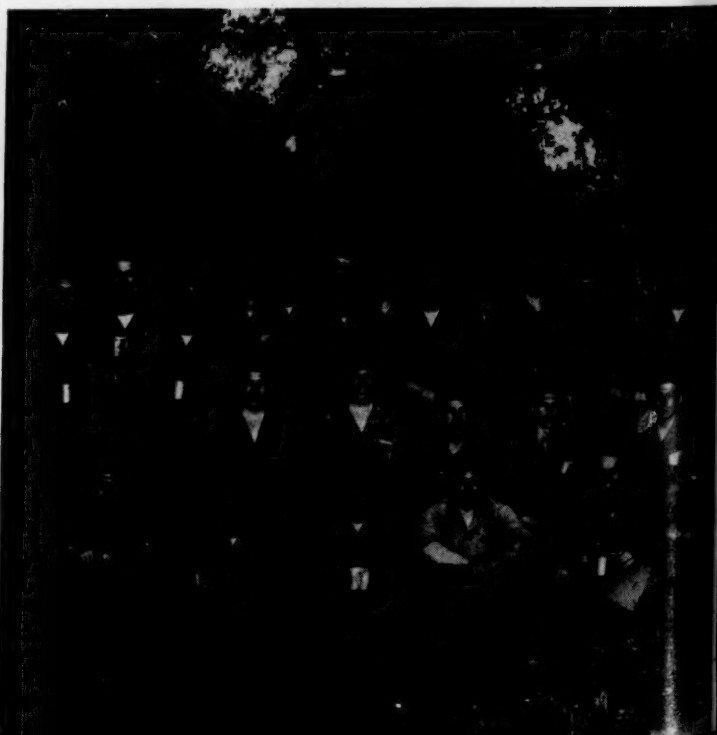
Saturday was a review of the impending problem.

Sunday was D-Day. The groups from the *Fremont* and *Bexar* landed at H-3 minutes, then proceeded by truck to Courthouse Bay where they could observe the landing of RCT-9 (including the *Palau* VROs) by helicopter. The combined groups visited the regimental, division, and corps CPs that afternoon. The problem continued through Monday morning, the VROs bedding down for the night behind a dune on the beach. More CPs were visited and then about noon the VROs reembarked.

On Tuesday the task force anchored at Lynnhaven Roads and the problem was discussed informally. On Wednesday the *Fremont* and *Palau* groups were transferred to the *Bexar* where a combined critique was held

The VROs attending the exercise were divided into three groups. Those below embarked on the *Bexar*.

The VROs, shown in the messing area at Camp Lejeune, were a cross-section of Marine amphibious experience,



Volunteer Reserve Officers Attending

Maj Donald C. Baker, Akron, Ohio.
 Maj James E. Blessing, Kingsport, Tenn.
 Maj William F. Cappleman, Winter Garden, Fla.
 Maj John C. Erskine, Silver Spring Md.
 Maj Charles E. Ingram, Conroe, Tex.
 Maj Robert W. Kash, Jr, Halifax, Va.
 Maj Richard L. Phillips, New York, N. Y.
 Maj Colin J. Reeves, Oaklawn, Ill.
 Maj Robert G. Reynolds, Chicago, Ill.
 Maj Stanley D. Rosenberry, Alberthea, Minn.
 Maj William W. P. Upton, Rocky Mount, N. C.
 Maj Meade Whitaker, Birmingham, Ala.
 Capt Theodore H. Abbey, Jr, Atlanta, Ga.
 Capt Daniel W. Allen, Englewood, N. J.
 Capt Henry J. Blossy, Larchmont, N. Y.
 Capt Richard D. Borgstadt, Oak Park, Ill.
 Capt John E. Brady, Jr, Hingham, Mass.
 Capt Robert J. Coates, Woburn, Mass.
 Capt Anthony P. Coburn, Hartford, Conn.
 Capt George D. B. Cown, Emporia, Kansas.
 Capt Charles M. Crider, Jr, Chicago, Ill.
 Capt Charles Daly, West Allis, Wisc.
 Capt James B. Deluca, Wallingford, Conn.
 Capt Vincent P. De Venoge, New York, N. Y.

Capt John R. Feighner, Marion, Ind.
 Capt John W. Foley, Kensington, Md.
 Capt Jacob J. Fortunato, New York, N. Y.
 Capt Thomas E. Fox, Columbia, Tenn.
 Capt James T. Goodwin, Minerva, Ohio.
 Capt Thomas H. Harvey, Jr, Kinston, N. C.
 Capt Rommie L. Holt, Atlanta, Ga.
 Capt John J. E. Kane, Lawrence, Mass.
 Capt Robert J. Kisgen, Carroll, Iowa.
 Capt Robert R. Logan, Castleton, N. Y.
 Capt Franklin A. McWilliam, Old Greenwich, Conn.
 Capt Fred H. Ritze, Bethlehem, Pa.
 Capt Joseph W. Rogers, Palmyra, N. J.
 Capt John M. Rosebush, Appleton, Wisc.
 Capt Herbert J. Seakwood, New York, N. Y.
 Capt James B. Shaeffer, New York, N. Y.
 Capt David E. Skipper, Tallahassee, Fla.
 Capt Karl T. Soule, Jr, Pittsford, N. Y.
 Capt Howard C. Steffens, St. Paul, Minn.
 Capt Joseph D. Swoyer, Jr., Philadelphia, Pa.
 Capt Winfield S. Wallace, Jr, Ocean City, Md.
 Capt James B. Young, Atlanta, Ga.
 Capt Richard A. Zachry, Columbus, Ga.

for the benefit of the VROs and Basic School. That evening the VROs disembarked at Quantico.

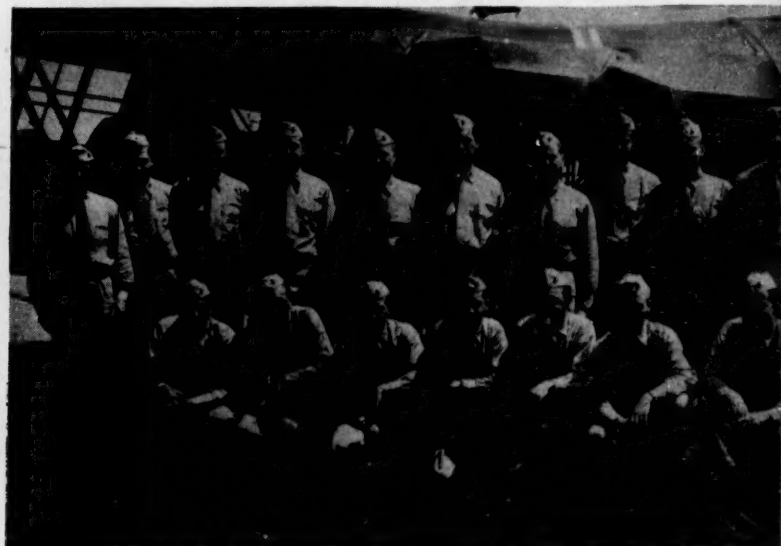
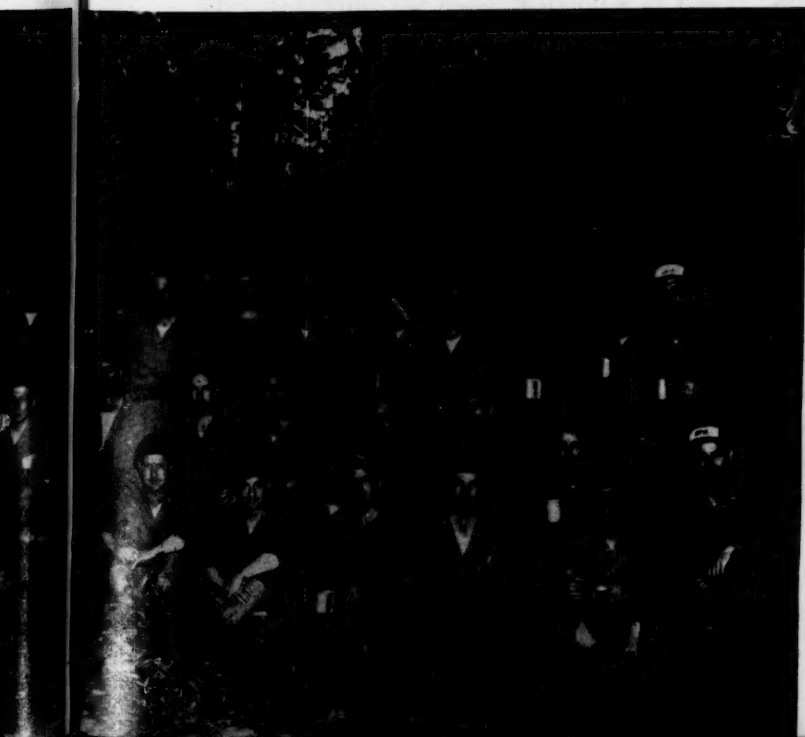
Thursday continued the critique of SC-99 and then the VRO program was discussed. Maj Alan R. Cason of the Extension Division, MCS, talked on the status of the correspondence study courses. BrigGen Dudley S. Brown, Assistant Commandant, Marine Corps Schools, also spoke to the group. After lunch, the afternoon's program included the showing of some wartime Marine films and a talk by Col Robert E. Hill of the Division of Reserve,

reserve officers who filled every billet and fought in every major action from the "Canal" to Okinawa.

HQMC. After this, the VROs turned in their equipment, publications, etc., and on Friday were detached.

Nearly all of the group were enthusiastic about the two week program. They found the renewal of their contact with the Marine Corps and their participation in SC-99 both interesting and instructive. The staff of MCS was also well-pleased with the results of what was, essentially, an experiment. Because of the success of the program it is expected that next year a similar group of VROs will be invited to join Operation Packard IV. USMC

Officers assigned to the escort carrier USS *Palau* were moved to the objective area by helicopter.



In Brief

Sixty-seven women students from colleges and universities throughout the nation began training in the Junior Course, Woman's Marine Officer's Training Course, at Marine Corps Schools, Quantico, Virginia, on Monday 20 June. During the six weeks course the women will receive instruction in close order drill, naval law, military courtesy, administration, and other subjects. The Senior Course, designed for students with previous military experience and graduates of the Junior Course, begins in August and leads to a commission in the Marine Corps Reserve.

Summer training for 180 Regular NROTC students from 52 colleges throughout the country began at the Marine Corps Schools, Quantico, Virginia, on 23 June. These students, who hold the rank of midshipman in the Navy, will accept commissions in the Marine Corps upon graduation from college. Studies for the group includes basic military subjects, and practical demonstrations and application of these subjects. An eight week period of training for Contract NROTC students began at the Basic School on July 8. This training closely parallels the training of the Regular students.

The Marine Corps Schools Rifle Team won the Elliott Trophy during the recent matches held at the Quantico, Virginia, rifle range. Firing a total of 1107 points, the Quantico team won by seven points over the Marine Barracks, USNAD, Brooklyn, N. Y., team. The Elliott Trophy was presented to the Marine Corps by the officers of the Marine Corps rifle team of 1909 and 1910, in appreciation of the interest and support of MajGen George F. Elliott in promoting skill in military marksmanship.

Fifty-one Reserve aviation ground officers recently completed a two-week active duty training program at the Marine Corps Aviation Technical School, Marine Corps Air Station, Quantico, Virginia. The first week was devoted to subjects of general interest, including jet engines, aircraft rockets, radiological warfare, and cold weather operations. During the second week, the group was split into four groups for specialization: Aircraft Engineering and Maintenance, Marine Aviation Supply, Electronics, and Aviation Ordnance.

Regular Marine Corps and Army Reserve units will conduct joint training exercises from 14 to 28 August at Camp Pendleton Marine Barracks. The 13th Armored Division, composed of Southern California and Arizona reserve groups, and the 7th Marine Regiment of the 1st Marine Division will participate in the exercises. BrigGen James T. Roberts, commander of the 13th and MajGen G. B. Erskine, commander of the 1st, will direct the training.

A procurement quota increase of nearly 50 per cent in the Naval Aviation Cadet Program has been announced by the Bureau of Naval Personnel. During the next 12 months, training will be given to about 1,500 cadets compared to the originally scheduled quota of slightly more than 1,000. The program is being enlarged to offset any decrease in pilot output as a result of the termination of the Aviation Ensign Program, which has trained more than 400 officers since it was begun in July 1948. Unmarried male citizens of 18 to 26 years of age, inclusive, are eligible for the program if they have successfully completed two years in an accredited college and meet the physical requirements. Candidates join the Naval Reserve and serve four years on active duty—18 months in flight training and the other two and a half years as commissioned officers with the operating forces of the Navy.

Officers and men of the Marine Corps Reserve were told recently how they may earn Reserve retirement credits (or points) for service performed since 28 June 1948. Marine Corps Memorandum Number 40-49, dated 27 April 1949, similar in many respects to a directive issued last November by the Navy Department, was placed in the mail on 6 May by the Division of Reserve. Subsequent directives will explain (1) the method of computing satisfactory Federal service performed prior to 29 June 1948—the date of enactment of Public Law 810, 80th Congress; (2) the manner in which reserve retirement credit shall be reported.

The XC-99 (experimental transport version of the B-36) recently carried a cargo load of 100,000 pounds, believed to be the heaviest load ever carried by one airplane. The double-decked six-engine transport, world's largest land plane, can haul 100,000 pounds of cargo, or 400 soldiers, or 300-odd litter patients.

The care in handling and disposal of unserviceable fluorescent light tubes is set forth in Marine Corps Technical Bulletin Number 3-49, dated 18 May 1949. The tubes should not be discarded by placing them in garbage or refuse cans where they may be carelessly handled or broken, or where any person may have access to the broken glass. Broken fragments should not be picked up with the hands. The Bulletin suggests two methods of safely disposing of fluorescent tubes.

The warrants of all master sergeants of the Regular Marine Corps were changed from "temporary" to "permanent" with date of rank the same as that presently held in their temporary status as master sergeants. In accordance with Marine Corps Memorandum 52-49, new warrants will not be issued, although a notation will be made in the service record book and on the face of the warrant of the individual concerned to show that the warrant is permanent.

An LST will be used by the Navy as an amphibious oil carrier on its annual Alaskan resupply expedition for the first time this summer. To aid in its unloading race against time and ice, the Navy expedition will utilize the large-capacity ballast tanks of the LST to speed the delivery of diesel fuel ashore at Barrow Point, Alaska, during the brief ice-free period when unloading operations are possible. This summer diesel oil will be carried in bulk aboard a regular Navy tanker, the USS *Neches*, and pumped directly into the ballast tanks of the LST, one of 11 ships making the resupply run. The LST will then be run ashore where a special pump will empty the vessel's ballast tanks via a pipeline into five 10,000-barrel steel tanks located several hundred yards inland.

Two giant electrical motors, each developing 25,000 horsepower and capable of churning up a 1,500 mph gale, have been installed at NACA's Ames Aeronautical Laboratory at Moffett Air Force Base, Calif. They will be used to test full-scale aircraft at supersonic speeds. The twin motors, built by the Westinghouse Corporation, are the highest speed motors of their size ever built with wound rotors. They drive a giant air compressor 33 feet long and weighing 400 tons.

Special regulations for Women Marines have been set forth in Marine Corps General Order Number 24 dated 11 May 1949. The General Order covers discipline, separation from the service, personnel records, and medical care, welfare, separation, and civil readjustments.

A non-segregation policy for the Air Force has been approved by Defense Secretary Louis Johnson, following his recent directive asking equality of treatment and opportunity "without regard to race, color, religion, or national origin." In conformance with the policy, the Air Force will assign its Negro personnel to non-segregated units.

Training aids libraries have been authorized by Marine Corps General Order Number 30, dated 3 June 1949, for the Marine Corps Schools, Quantico, Va.; 2d Marine Division, Camp Lejeune, N. C.; Marine Corps Recruit Depot, Parris Island, S. C.; 1st Marine Division, Camp Pendleton, California; and the Fleet Marine Force, Guam.

Authorizations for promotion of enlisted personnel will be distributed semi-annually by Headquarters Marine Corps for all grades except the sixth according to Marine Corps Memorandum 47-49, dated 18 May 1949. Commanding officers may effect promotion of privates to privates first class when the individuals are considered qualified and meet the requirements. For promotion to technical and master sergeant, the marine must have two years in grade; for promotion to staff sergeant, 18 months in grade, and for promotion to corporal and sergeant, one year in grade. Computation of service-in-grade will be based on date of rank as distinguished from date of promotion.

A uniform military pay system for the National Military Establishment which enables soldiers, sailors, and airmen to draw their pay promptly anywhere in the world was put into effect 1 July. With the adoption of the new system by the Army and Air Force, the pay systems of all NME Departments are substantially uniform. The system was already in operation in the Department of the Navy. A previous change incorporated the Marine Corps in this system last year.

Reply to Sgt Holt

By Sgt Leland E. Dye, Jr

● ICONOCLASTS ARE A WONDERFUL INSTITUTION; THEY are one of the eternal blessing, curses, and crosses which humanity has always had to bear. Every organization, like every society, is sometimes amused by them, sometimes angered by them, and generally stimulated by them, for they are the leaveners of every age, and should be listened to. However most of them, in spite of violently differing opinions, have one trait in common—they go to extremes. And in the opinion of the author, Sgt Holt in his article, *Leadership and the New Marine Corps*, went to extremes.

Most iconoclasm in the Marine Corps is limited to articulate but relatively ineffective "gum-beating"; therefore Sgt Holt's provocative article in the June edition of the *GAZETTE* comes as a pleasant and thought-stimulating surprise, and indicates that he has put considerable thought into a problem which has been bothering all of us. Being an enlisted man myself, I am particularly glad to see that he has not only criticized from the enlisted man's point of view certain aspects of the "New Marine Corps," but has also proposed solutions to the problems he has stated. While I agree with the problems he has stated, I do not agree with all of his solutions to them.

Perhaps the main drawback of Sgt Holt's article is that he speaks only for himself and for his organization. For example, he states in so many words that the average marine prefers women and whiskey to building ship models. Perhaps that is true, but hobby shops offer more than model ship-building. Almost every "average marine" of my post uses the hobby shop to some extent. And hobby shops are not meant to supplant, but rather to supplement normal liberty attractions.

● ONE RECEIVES the impression that, in the opinion of Sgt Holt, Special Services activities are completely superfluous. On the contrary, and I speak for many marines as well as myself, I would be very unhappy if we were to be deprived of our movies, libraries, athletic gear, and football teams. The Marine Corps after all is not a monastic order from which one occasionally breaks out in wild, drunken abandon with wild women. Athletic teams are highly important for both morale purposes and public relations, and form, in my opinion, a valuable bond between the Marine Corps and the public, and give the average marine an additional basis for pride in his outfit. I know that at both my present and previous post the marines are very proud of their teams.

However, one of my main objections to Sgt Holt's

viewpoint is that instead of saying, "An elaborate Special Services Program is no substitute for good discipline," he seems to say, "Since Special Services programs have not brought about good discipline, Special Services must go." In my opinion the Special Services program represents a great advancement over the old "Let the service-man fend for himself" attitude, for the program is simply an attempt to make the marine's off-duty hours more enjoyable and to render him convenient services—no more.

The same criticism applies to Sgt Holt's treatment of "tradition." Traditions, broadly speaking, are historical feats toward which the marine can look with pride and which he tries to emulate, or even outdo. They are not meant to be substitutes for discipline.

● I DO BELIEVE that Sgt Holt came close to the mark when he stated that discipline "is obtained only by intelligent leadership," though I would have said "mainly" rather than "only." However, I disagree strongly with his solution. Reducing sergeants and corporals to the effective status of privates is a solution which could hardly solve anything except in a large headquarters unit which is top-heavy with NCOs, and even there NCOs should be treated like NCOs if possible. Reducing the number of those in authority will not solve the problem of discipline, for any organization, whether over-staffed or under-staffed, can be welded into a well-disciplined organization. I have seen it happen many times by dint of good management and by proper delegation of tasks and authority. The Marine Corps T/O has always been, and, it seems to me, is meant to be a basis for a highly flexible and continually changing hierarchy of authority. In many units NCOs are relegated to the practical status of privates because they are paid for their abilities and skills rather than for their authority. In other units, a private first class may wield more authority than a staff NCO in the former—and wield it well. No, the solution for better discipline does not lie in changing either the T/O or the status of NCOs.

What, then, is the solution? As Sgt Holt stated, "We do not need any new rules concerning the officer-enlisted relationship. . . . If anything is wrong with the new Marine Corps, the blame can be placed squarely on the shoulders of its leaders." I would like to elaborate this very pertinent statement. It seems to me that by and large the trouble may stem from two facts: many of the leaders, both commissioned and enlisted, either do not

In the June issue iconoclast Sgt Holt blasted Special Services, tradition, and leadership. In this article another sergeant rebuts Holt's argument. "Iconoclasts," states Dye, "have one trait in common—they go to extremes."

understand the principles of good leadership, or, if they do understand them, they are too indifferent to apply them. In other words they are too lazy or they just don't care. There are, of course, good leaders today who demonstrate by comparison the need for more good leadership.

Here are what I consider to be the most frequent and flagrant violations of good leadership: failure to back up both officers and NCOs; inconsistent and unpredictable policies, such as continual and irresponsible changes in uniform of the day, no set time for any of the formations, and grossly inconsistent punishment for offenses; conflicting orders from senior officers with the result that men are at a loss what to do next; non-enforcement of regulations, or, even worse, alternating periods of enforcement and non-enforcement of regulations; and finally, unfair apportionment of duties and privileges, usually caused by petty discrimination on the part of the man who makes the rosters. Most of these discrepancies are obviously caused by lack of coordination among leaders, which in turn is caused by laziness and indifference.

☛ HOWEVER the most grievous breach of good leadership is failure on the part of senior officers to back up their subordinate leaders. There is always a certain percentage of men who are impervious even to the best leadership, and who can be brought into line only by punishment. If no disciplinary action is taken in these cases, the leader is forced to resort to illegal punishment, or, more often, discipline simply breaks down. I do not intend to go into a lengthy discussion of leadership. However I do wish to point out that so often I have seen officers and NCOs wondering why discipline in their organization is so poor, but when an offender is put on report, they chide him and threaten him, and do nothing—and then wonder why the offense is repeated. A captain once told me that he considered direct disobedience to orders a trivial offense, and that he didn't wish to be bothered with such bagatelles. Discipline in his organization was atrocious. Officers should always remember that in the majority of cases a man is "run up" only as a last resort and that it takes a great deal of courage on the part of an NCO to put a man "on report," for it is a final test of his authority; if he is not backed up he "loses face" with his senior officers. On the other hand, if he is backed up, it stands as a warning to the rest of his men that he is to be obeyed, and discipline always improves as a result. In

short, if a leader is firm, fair, and consistent, he will always have good discipline and the respect of his men—**PROVIDING HE IS BACKED UP.**

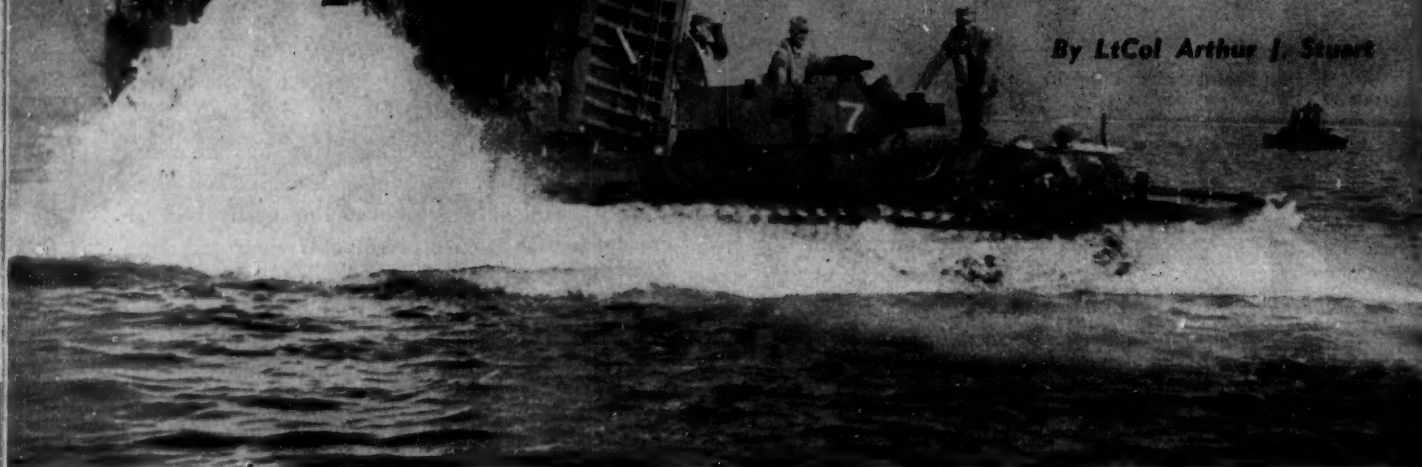
Before closing, I would like to bring up one more point about treatment of subordinate leaders. Too often an organization will have poor discipline partly because NCOs are not treated as men presumably older and more experienced should be treated, that is, given special privileges and prerogatives due to their rank. It may not seem "democratic" to place NCOs in separate rooms and to feed them in separate messes, but I have observed that there is less trouble with discipline and higher morale among the NCOs where these practices are in effect. After all, NCOs like to be able to take their hair down and be human too. Needless to say, NCOs should be treated with respect in front of their subordinates. However if they are lazy, disrespectful to their senior officers, or incompetent there should be no hesitation in reducing them, for an NCO should set an example for the men, and his rank should be respected. I believe that too many NCOs have been allowed to get away with the above offenses, a situation which perhaps partly accounts for the lowered prestige of the noncommissioned officer today.

☛ I DO NOT lay claim to have the solution for all ills of the new Marine Corps. Far from it, for it is a human institution, subject to all the vicissitudes common to human affairs. But I have been in well-disciplined organizations where most, if not all, of the faults I have mentioned have been eliminated, and I know from my own experience that we can have a Corps far superior to the old for the very reason that we do have superior personnel today as well as more services and conveniences for the enlisted man. Perhaps our present difficulties are due to the fact that we have a new conception of the fundamental rights of the enlisted man and of his dignity as a human being, and that we are suffering growing pains in attempting a new orientation which will combine effective discipline with fair and human treatment of the men under our command. At any rate, we are members of a great organization compounded, it would seem, of just the right mixture of progress and tradition and pride and humility. I only hope we will not look back toward yesterday, but will continue to build for tomorrow, keeping what we have already attained. I, for one, look forward to a long and even greater future for the Corps!

US ☛ MC

Mechanization of the Amphibious Attack

By LtCol Arthur J. Stuart



☛ ACCEPTING THE MECHANIZED AMPHIBIOUS ATTACK AS a desirable and practical development of offensive warfare, its successful application is but a matter of adequate tactics and techniques. No new principles are involved. That which is new lies simply in the substitution of the mechanized for the infantry in the composition and tactics of the landing force. The mechanized landing attack will still be basically amphibious and the landing force will still have the same basic tactical role: to fight its way ashore, over the beaches, and to objectives inland.

Just as the landing force successfully adapted infantry tactics to amphibious warfare the mechanized amphibious attack can be developed most logically through the adaptation of proven mechanized doctrine.

This being so, it is germane to review briefly the cardinal principles of the amphibious and mechanized attacks if that which we shall arrive at is to be sound.

The amphibious attack exploits naval strategic mobility to strike the enemy (ashore) with a high degree of surprise. It uses maximum offensive power against minimum defensive counter-concentration. The strategic movement to the objective area is a naval operation (although of obvious import to the being and status of the landing force) depending upon effective naval and air dominance—isolation of the route of movement and the objective area. Aside from vital protection against strategic-tactical hostile interference, the ship-to-shore movement although physically a naval process is in essence a *landing force maneuver* constituting the landing force's assembly, deployment, and assault-approach (all on water) to seize the initial land objective—the foreshore. Action beyond the beaches, upon which the

final execution of the over-all amphibious mission depends, is primarily landing force in nature, with the naval role but assisting.

It is thus evident that the ship-to-shore movement and beach assault is the core of the amphibious operation, and its most difficult and vulnerable phase. Directly derived therefrom are the following important amphibious principles. The hostile capability of reaction must be *weak* at the hour and place of assault. The landing area must be *isolated* from outside interference during the critical period of landing. The assault spearhead of the landing force must move at maximum speed and be so composed and so deployed as to provide maximum assault power. It must be protected by maximum support and must present a target of minimum vulnerability. The landing force must constitute a cohesive and controllable tactical entity during the critical ship-to-shore movement and beach assault.

As a final but no less important principle, the ship-to-shore communication route must *be kept open* to permit the positive and rapid build-up of landing force potential ashore and to insure continuous logistic support.

The essential principles of the mechanized attack must also be clearly understood; for they must also govern the makeup and tactics of the mechanized landing force, and will largely determine the nature of action ashore.

Above all else, the mechanized attack depends on *speed, mass, and fire power*. Success is achieved through swift, violent, locally irresistible onslaught, rather than through siege tactics.

Speed is achieved through machine movement and the *complete mechanization* of all arms to attain a balanced

Part II: The last war proved infantry tactics could be adapted to amphibious warfare. Is the same true of armor? The author believes so and points out that proven mechanized doctrine lends itself logically to the amphibious attack

entity of combined arms capable of rapid movement and action in concert.

Power is derived essentially from the fire capabilities of the direct-fire application of the field gun and machine gun, mobile and armored as *embodied in combination in the tank*. To understand mechanized combat, the tank must be appreciated for what it is—a composite weapon comprising the two deadliest weapons a ground warfare in highly mobile form and with a degree of invulnerability through armor superior to other applications of the same weapons, enabling their close range, direct-fire use in the assault. The tank arm, is however quite impotent alone, and is dependent upon complementing mechanized infantry, artillery, engineers, and reconnaissance and upon air support.

The principle of mass dictates a strong initial force and an adequate follow-up force, for military mass always has depth. The principle of mass is reflected tactically in the commitment of the mechanized force available in concentrated form in a minimum number of important zones leading to decision. It dictates narrow frontages and the projection of power almost exclusively to the front, with supporting fires fixing and neutralizing the enemy on the flanks and mechanized or motorized follow-up troops securing the rear. The consecutive, rather than simultaneous, seizure of objectives is a tactical derivation of the principle of mass and is consistent with the associated mechanized principles of centralization of control and economy of force.

The mechanized force must be protected on all sides by a reconnaissance screen, which also normally provides a major part of the detailed information of terrain and the enemy upon which movement and disposition for battle of the main force is based.

Shock effect is greatest when the capability of resistance at the time and place of mechanized onslaught is weak. This favorable condition is brought about either through striking suddenly at a time and place unexpected by the enemy or by intense bombardment.

Antitank weapons and antitank means are the only element of the hostile force potentially capable of decisive interference with the mechanized attack. Therefore, as an important principle, the hostile antitank capability must be carefully evaluated and the enemy's antitank defense destroyed or neutralized.

The mechanized assault, driven between and following supporting fires, consists of massed medium and heavy tanks, mechanized infantry and engineers. Assault

power is strengthened by integral vehicular-borne means for the precise control of artillery and air support. Infantry provides fire support using vehicular weapons, and infantry and engineers remain mounted at all times unless forced to dismount by direct hostile fire, by the nature of terrain, or to execute special missions. In zones of high trafficability the necessity for dismounted infantry action is reduced, being largely proportionate to the enemy's continued ability and will to fight when subjected to intense tank fires following his battering by supporting fires. When forced to dismount from carriers, infantry deploys and generally adds its highly flexible and versatile, if light, firepower to the tanks'. Carriers are called forward and the infantry resumes its mounted role as soon as conditions permit.

Engineers play an obvious and vital role upon which vehicular mobility—and so the mechanized attack—directly depends.

Finally, mechanized action is entirely dependent upon logistic support. Without fuel and ammunition being fed forward in a steady stream through a flexible system of delivery, the most powerful mechanized force becomes immobile and impotent in a matter of hours; without adequate vehicle maintenance it will have no staying or recuperative powers, and will just as surely if not as rapidly become enervated.

In the amphibious-mechanized attack, that phase up to the water's edge will be largely as hitherto with minor though vital adjustments to mechanized requirements. The land phase will require somewhat more extensive changes. The over-all pattern begins, however, to take shape.

THE FIRST DIFFERENCE may be the mission. The mission could be a conventional one to seize and defend a naval or air base, to seize a beachhead for further land operations (particularly armored operations)—or it could be a somewhat broader mission to destroy a particular force or installation, to sever and block communication routes, and other such missions which could be executed by raid or sudden thrust. The former type mission will entail the much more rapid seizure of a deeper beachhead than before, but this would be possible, as would execution of the latter type missions, through the increased radius of action ashore and the greater speed and power of the mechanized landing force.

Planning could generally follow the amphibious sequence, with no departure from present sound amphibious

ous command relationships, definition of responsibility, and coordinate naval-landing force planning.

The scope and nature of advance intelligence effort need differ from the usual amphibious only in the following particulars. Hydrographic study of the target must include greater emphasis upon beach characteristics affecting the landing and exit of vehicles, off-shore and on-shore mine fields and obstacles, and upon the precise determination of foreshore and backshore trafficability. The zone of intelligence coverage must be deepened inland and primary intelligence effort focused on the following:

- (1) *The hostile antitank defense (and mobile reserves)—including location, nature, and strength and*
- (2) *Terrain characteristics—particularly trafficability, vehicular cover, and vehicular concealment.*

Normal means of amphibious reconnaissance re-oriented to provide the foregoing information should be adequate. Although perhaps not generally so recognized, the present highly refined prior reconnaissance of the landing area is quite as thorough and detailed as in land warfare. The enemy is not alerted, and aerial photographic and sneak reconnaissance are both more practical than under the normal conditions of established land fronts. Aerial photography and other amphibious reconnaissance means have been so highly developed that all details of terrain essential to successful mechanized action can be readily determined, including that detailed information required to plan the maneuver of small units and even of individual vehicles.

Based on the intelligence estimate, the landing force commander's estimate and decision would be reached through orthodox evaluation and military reasoning, the time and place of landing being selected to provide the greatest combination of physical facility of landing, minimum hostile interference, and the greatest certainty of accomplishment of the mission in respect to objectives and conditions extant inland.

THE SCHEME OF MANEUVER of the mechanized amphibious attack, of course, will always include that critical amphibious phase—the assault of the beach. This will involve a linear assault in the selected landing area or areas. A continuous landing beach is not necessary and the location of inland objectives and the nature and trafficability of beach and terrain inland may dictate several separate landings. However, landings should be in general proximity to each other to provide mutual support; also, so that success and breakthrough inland anywhere will at once outflank and render untenable hostile positions which might be holding up the attack in other landing areas.

As future hostile defense forces become more mobile and the premium on surprise becomes greater, pre-landing naval and aerial bombardment must be much

brief, but far more intense. The primary function of the preparatory bombardment will be to smash the hostile antitank defense in the landing area. Naval gunfire concentrations and air strikes of *great weight* covering hostile routes of armored counterattack must be pre-planned to be *executed rapidly* on receipt of target information provided by an *effective antitank warning service*. Powerful direct naval gunfire and air support reliably controlled by vehicle-borne spotter-controllers must be provided all mechanized task forces. This direct support would be employed by the task force to blast hostile strongpoints encountered, to protect the flanks, to disrupt counterattacks—and above all, to *destroy or neutralize hostile antitank elements as encountered*.

THE SHIP-TO-SHORE movement would be greatly accelerated as a result of mechanized passage of the beach and mechanized assault inland. If a ten-knot speed on water and land was achieved, good vehicular dispersion could be obtained by a one-minute intervals (300-odd yards distance) between waves. Even with slower speeds and greater interval a powerful force could be landed in the first hour, a far greater force than during the entire first day of past landings. With this sharp speed-up of the attack two alternatives become possible. The assault waves could continue inland beyond initial beach objectives, pushing out reconnaissance and varying formation in accordance with previous plans and the unfolding situation to seize inland (final) objectives, leaving for following waves the task of screening and defense of the landing area. Or, initial assault groups could establish the landing area screen by fanning out inland to seize dominating and protective terrain, with following task forces making the main thrust inland. In either case, both the establishment of the landing area screen and attack inland would be executed almost simultaneously, and the choice of method and sequence would hinge largely on local conditions. If the initial assault group established the landing area screen, tank units and other heavy elements not required for its maintenance could be shifted to task forces driving inland. If later waves established the screen they could be specially composed as required.

Local defense of the landing area would depend much upon the rapid construction of hasty obstacles and mine-fields and upon local mobile reserves and aggressive reconnaissance. Local defenses would be backed up by the *entire mechanized landing force*, highly mobile and an effective general reserve. The screen would thus require but light forces capable of giving warning of hostile threats and delaying counterattacks only until proper counter dispositioning of the main landing force could be effected.

It must be remembered always that seizure of the landing area, important though it is, is not an end in

itself but rather is a preliminary and supporting phase to the *decisive seizure of final objectives*, upon which the accomplishment of the mission is dependent.

Unless absolutely certain the landing will not be opposed, the following assault pattern and sequence, adapted to conditions, might be considered normal to seize rapidly and pass initial beach objectives. First, beach defenses must be blasted, especially antitank defenses. *Lanes or zones must be cleared through beach obstacles and minefields prior to the landing.* This can be accomplished by special bombardment or by line charges projected or placed by amphibious vehicles, landing craft or aircraft. With present incompletely developed methods of employment of explosives to clear mines, mine-clearing vehicles would be required in the assault to insure complete clearance. Maximum initial assault power is achievable *only through a fire wave of medium and heavy tanks.* The formation of this logical first wave should be staggered, not linear, and would reflect the usual adaptation to conditions and the configuration of the coastline. Command tanks would be in their usual over-watching position, slightly behind assault tanks. In the vicinity of command tanks, and likewise

additional special armored vehicles and heavy tanks.

As many additional waves as required to insure the penetration and over-running of the hostile beach defense should be deployed and committed to the initial assault. Their composition would be essentially that of the first two waves, that is a tank wave followed by an infantry-engineer wave. Any desired assault depth could be built-up either by narrowing task force frontages or through use of larger task forces.

However, only sufficient strength should be deployed in the assault to insure the positive and rapid overrunning of beach defenses and directly supporting hostile positions without risk of failure or delay. The remainder of the landing force should be landed as balanced tactical units prepared for instant action but deployed only as required for self-protection. These later waves should be constituted and disposed as required to execute planned missions inland, and they would follow or pass through, reinforce or be reinforced by, assault groups as planned to accomplish the drive inland and simultaneously establish the landing area screen. *However, regroupment should be minimum and insofar as practical pre-planned.*

The main advantage of armored amphibious attack over airborne attack is the capability of landing the heavy components of a combined force early. For the ground force commander this means greater firepower, including that of heavy guns, plus the shock action and mobility of the mechanized attack

in over-watching position, should be the *special tanks for air and naval gunfire support control.* The heavy tanks would engage major hostile weapons, heavy armor and fortifications, with the mediums smashing lighter weapons and laying down area neutralization fires on the final beach approach and providing close-in protection for both the heavies and themselves. Tank dozers and flame and obstacle-clearing tank units should be landed as an integral part of the wave, usually following gun tanks but so located laterally to be available instantly to complete the job of obstacle clearance and to execute both preplanned missions and other tasks as the need developed.

☛ THE SECOND WAVE should consist of mechanized infantry and engineers, the function of this wave being generally support of the first wave. Units within the wave should cover down tank elements of the task force of which a part, Command would cut through waves from front to rear as in the present amphibious task organization. This second wave of infantry and engineers could be light, only strong enough to provide close support of the tanks and to execute special missions. Larger tactical infantry and engineer units would follow the assault later. Tanks could be added to fill out the wave; this landing position would be excellent for

Tank flotation devices would be essential for tanks deployed in the assault of the beach. But following tanks could be landed more economically, and quite satisfactorily, directly from landing craft and landing ships. Infantry and engineers in the initial assault should be landed in armored amphibious carriers (today the amphibian tractor). Infantry and engineers of later waves could be landed in either amphibious carriers or conventional armored land carriers (from landing craft and ships).

So far, we have not discussed the role of ever-important artillery. Naval gunfire, limited in flexibility and unable to support the attack beyond a certain distance inland, is at present a far better supplement than substitute for artillery. The role of artillery in both amphibious and mechanized operations always has been an important one offensively and defensively, although its offensive amphibious value has been somewhat tempered in the past by its late entry in the action ashore. But as landing force mobility is increased, artillery cannot but gain in importance by virtue of its own great inherent mobility (of fires). Pending development of a *long-needed, truly amphibious artillery* capable of functioning both afloat and ashore, the mechanized landing attack requires the immediate landing of artillery as sufficient ground is uncovered ashore by assault elements to per-

mit minimum range cross-fire employment. Self-propelled artillery should be landed from the first landing craft waves following assault tank-infantry-engineer groups. It is visualized that the landing of direct support artillery could be accomplished normally *between H-plus-5 and H-plus-15 minutes*, depending on the speed of the mechanized assault inland. Artillery forward observers would be vehicle-borne. The employment of artillery (supplemented by naval gunfire) in the action ashore would be in accordance with mechanized doctrine.

☛ THE ARMORED AMPHIBIAN has been eliminated. Despite its splendid performance in Pacific over-reef operations, it is an improvised and essentially inferior weapon for all but special operations involving peculiar off-shore obstacles. It has no place in any other amphibious attack, for *normally the floated tank, with greater firepower and much less vulnerability, can perform the armored amphibian primary mission far better*, and tanks and self-propelled artillery can execute all secondary armored amphibian missions ashore more efficiently, in addition to their normal roles. The passing of the armored amphibian will not mark the end of a weapon type but only the obsolescence of an improvised amphibious tank-assault gun model.

☛ MECHANIZED RESERVES should follow assault troops closely along the axis of major advance—*primarily lending depth, weight and continuity to the offensive action to seize final objectives*, at the same time constituting ready reserves in guarantee of the inviolability of the landing area.

Behind these reserves should land the follow-up troops—mechanized, motorized or partly motorized to employ shuttle transportation. Heavily equipped with defensive weapons, these troops would push behind the mechanized striking forces, mopping up by-passed resistance and promptly occupying and defending objectives. The landing of follow-up troops normally could begin during the first hour and their fanning out inland would free the landing area screen for other employment.

Upon establishment of coordinated defenses along the final beachhead line by follow-up troops, mechanized assault elements would complete rearmament and revert to mobile reserve. In this powerful reserve backing up static defenses would rest the great strength of the defense. Artillery, aviation, and naval gunfire (range permitting) should be flexibly employed in *dual support* of main line of resistance static positions and the armored reserves.

The complete seizure and consolidation of a beachhead should be possible within the period of perhaps half a day, and certainly a whole day. The enemy would be offered little opportunity to strike the landing force in movement or on unfavorable terrain; the beachhead

would be won before night could provide favorable conditions for the enemy to converge his forces in major opposition.

Thus far, we have confined our detailed discussion of the amphibious-mechanized attack to the execution of a conventional amphibious mission in the seizure of a beachhead. This has been intentional, for broader employment of the mechanized landing force against *deeper* objectives such as vital hostile installations would entail the preliminary establishment of the beachhead much as described. Landing force task forces would then strike farther inland beyond the beachhead to execute special missions by limited radius mechanized thrusts, subsequently retiring to the safety of the beachhead as might be necessary.

The passage of large armored (or other type) land units through the landing force to commence operations in exploitation of the beachhead would be facilitated by the nature (mechanized) of the landing force. The landing force could render valuable early assistance, and thereafter guard the beachhead and rear—or if required, landing force elements could be used to reinforce the land forces during early phases of operations inland. In the over-all sense, objectives defining the final beachhead line in such operations would be only *intermediate* objectives, and would be consolidated and defended only to the degree necessary to *protect the rear and provide a springboard* for the large-scale thrusts inland. Such subsequent operations properly fall in the category of land warfare and would be governed by land warfare doctrine.

☛ THE MECHANIZED amphibious attack is entirely feasible logistically. Shipping of required types exists today in sufficient quantity to land powerful mechanized landing forces. Shipping of *more efficient types* could be constructed on a war basis in much greater quantity. Supply requirements would be heavy *but could be met*. A future beachhead of 25 mile depth probably could be seized without refueling assault vehicles, being well within the fighting radius of modern combat vehicles. With surprise and speed drastically reducing the enemy's capability of reaction, it is likely that most assault units could seize final objectives without rearmament. However, *at least sufficient fuel and ammunition for a single complete servicing and rearmament of all equipment should be embarked mobile-loaded and landed immediately after follow-up troops to provide supplies as required to complete the seizure of the beachhead* and for prompt servicing of combat vehicles to ready them for beachhead defense. In the case of limited exploitation operations by the landing force beyond the beachhead, additional mobile-loaded supplies would be required proportionate to scope and duration. In either case, supplementary supplies should be landed as early and

as rapidly as practical to build up supply reserves.

Maintenance elements should be landed in normal strength and position in relation to combat vehicle components in accordance with mechanized doctrine; retrievers should be included in assault formations. And any undue limitation of maintenance equipment would but prove *false economy* in the long run.

The mechanized landing attack is most sound from the over-all naval viewpoint. The entire landing force and its mobile-loaded supplies could be landed in a fraction of the time hitherto required, sharply reducing the period of concentration and immobility of naval vessels incidental to landing the landing force. *Control* of the accelerated ship-to-shore movements would be *simplified*. Instead of landing only light elements in the assault and selectively ordering ashore artillery and heavy units (intermingled with supplies and infantry reserves) as space became available during the "inching" progress of the past infantry amphibious assault—balanced forces would be landed initially; there would be no halts to disembark or dismount at the beachline, no bogging of the ship-to-shore movement.

THE DISPATCHING and control of landing waves would be facilitated, with speed and interval between waves simply adjusted on preceding waves. Although the landing formation and order of landing serials could be varied from plan, it is not visualized that this would be required normally. The commitment of later units to action would be simplified; more rapid—for they would be already ashore, immediately available and dispersed, probably far safer than afloat. The quite ponderous system of ordering so-called "on call" waves ashore after the "need has arisen ashore," used in the past to commit reserves and supporting troops would be largely eliminated. Finally, control of armored troops is inherently easier than control of dismounted troops due to better observation and markedly superior communications enjoyed by mounted commanders, and because vehicles are far easier than men to observe and control in battle.

Whereas the mechanized amphibious attack is in fact practical today and we have for the main confined our discussion to current equipment, certain materiel improvements are clearly needed. Improved tank flotation devices are desirable to give greater water-borne tank speed and maneuverability. A completely new armored amphibious carrier of greater speed on water, vastly improved performance on land, and with all-around splinter-proof armor—to replace the amphibian tractor and most if not all wheeled vehicles of combat units—is next in importance. A heavy tank superior to any tank in the world and improved mine-clearing equipment are other items very badly needed but seemingly capable of attainment. In the naval field, adaptation of amphibious shipping to better transport and land equip-

ment (rather than men) is a must. The large, vulnerable and inefficient AP and AK of small payload must be replaced by greater numbers of smaller landing ships tailor-made to accommodate and launch flotation-device equipped tanks and to land combat and supply vehicles directly on the beach rapidly in great numbers. The tempo of disembarkation must be stepped up. Antiquated boom-sling methods of cargo handling and disembarkation of personnel by cargo net should be replaced by faster, more efficient methods. *A system of bulk fuel delivery ashore* would be of particular value in supporting the mechanized landing attack.

ALTHOUGH the fully mechanized landing force is entirely within our capability of attainment, we must avoid three principal pitfalls. First, *total mechanization is essential*, for any dismounted element slows the entire force, any unarmored element exposed to destruction or neutralization jeopardizes the balance and effectiveness of the whole force. Second, there is the *danger of compromise or hedging*; a weak, faltering mechanized attack can only result in certain and costly failure—doubts must be resolved in the decision whether or not to employ the mechanized attack, and fully adequate forces must be supported without stint; and the mechanized attack must be boldly and determinedly executed. Finally, although mechanized tactics and techniques of combat are clearly defined, they are *complex in detail* and require the comprehensive training of all ranks of all arms to achieve the coordinated, near-automatic teamwork at troops level. To give good troops good equipment will not be enough; mastery of vehicular combat including precision fire and maneuver—long established requisites of successful mechanized action—can be achieved only through *thorough and detailed individual and unit training* with full equipment in conjunction with all other partners of the armored team.

In conclusion, we shall summarize briefly the major implications and significance inherent in the concept of the fully mechanized amphibious attack.

The mechanized amphibious attack and the airborne attack are naturally complementary. The amphibious attack, of lesser strategic mobility than the airborne attack, has one major compensating advantage—the capability to land a combined arms force including all heavy components to do battle with and defeat balanced hostile ground units. This capability to land critical heavy weapons must be fully developed and exploited if the amphibious attack is to retain its primary usefulness—for the airborne attack will be able to execute far better the light and heavy infantry missions of tomorrow. Airborne enthusiasts can but dream of the future potentialities of the airborne-mechanized attack. But the fully mechanized landing force is today a practical amphibious capability.

USMC



In Defense of the Jockey

By Capt Joseph F. Donahoe

THE DUST HAS LONG SINCE RESETTLED ON FOREMAN Field, Norfolk, Virginia, from whence it had been raised in the titanic struggle between the San Diego Marines (MCRD, San Diego) and the Quantico Marines (MCS, Quantico) for the All-Navy Championship. Quantico won, 21-0, amid Conover models, helicopter football drops, five bands, 20,000 people and Bill Stern, NBC's ace sports broadcaster, who told the whole United States about it on a nationwide hookup. The affair was planned in Norfolk as a kick-off for the March of Dimes drive, and the Marine Corps, by virtue of the fact that both competing teams were Marines, received a large amount of favorable gratis publicity. This publicity not only included the newspaper coverage, but also radio, because an estimated 17,000,000 listeners were tuned to the game and, for two and more hours, heard Bill Stern use the word "Marines" countless times, coupled with such adjectives as "dauntless," "scrappy," "rugged," "excellent," and many others.

Capt Joseph F. Donahoe, an assistant coach of Quantico's nonpareil eleven, is also an instructor in mountain warfare at The Basic School.

Now that the models have returned to face their cameras, the helicopters to their more military pursuits, and the last echoes of the bands' last marches have died, it is a propitious time to evaluate service athletics in general, and Marine Corps athletics in particular, as to their beneficial effects on and in the Corps.

Specifically — Is there proper justification for large-scale athletic programs involving Marine Corps teams?

The pros and cons of the argument range, so I am told, from the high, top-level planning phase of the generals' offices down to the execution and endeavor level of the barracks squadroom as to whether athletics justify their existence, especially beyond the intra-mural scope, and in the inter-service and service-civilian clashes.

"Competition is the life of trade" may or may not be true, but it is one of the basic axioms of the free economy system of enterprise under which we live. This is significant, because it underlies what we already know about this country — that its people have the greatest respect, individually and collectively, for the winner in any competition. "The men who grow tobacco know tobacco — it's Luckies two to one among independent tobacco growers;" "best by test;" and, "the economy leader in the



Is there proper justification for large-scale athletic programs involving Marine Corps teams? Good teams playing colleges before large crowds keep the public "Marine conscious," and provide recreational entertainment for the post as a whole

low-price field" are all familiar but random samplings of slogans emphasizing the competitive state of the American mind. This competitive state exists in every field. We all know, as fact or legend, how hysterical the old grad gets when his beloved Siwash plays Hardly Normal or Comatose State (or Army plays Navy) and how, to him, the fate of the nation hangs in the balance.

There is a distinct relationship between this competitive state of the American mind and the editorial appearing on the back cover of February's *GAZETTE*. *Public Relations for Every Marine* was its title. It set forth a six-point program "to gain new friends and justify the confidence of old friendships," and urged all marines to become participants. Much abridged, the six points were:

1. Make every man a Marine Corps salesman when in contact with civilians.
2. Discourage "we won the war" attitude; rather "we did our best with every assignment."
3. Discourage budding authors from dwelling on Marine Corps wartime hardships.
4. Encourage common courtesy and promptness in civilian correspondence.

5. Stress excellence in amphibious operations, not all phases of warfare.

6. By good example, be worthy of emulation, especially that of the youth of the nation.

THE POINTS were well made, and there can be no argument with them. In fact, it behooves us to find ways and means of implementing such a program. Let us examine more closely points one and six. First, point one. This fall, Quantico will play Virginia Military Institute, Virginia Polytechnic Institute, Xavier University, Wayne University, West Virginia University, and Niagara University. In playing these games, the Quantico Marines will perform before a spectator group which will be largely civilian. In general, the particular game these civilians watch will afford them their closest contact with the Marine Corps and their impression of Marines is bound to be influenced by the team's showing. A good team of Marines will, for approximately two hours, be a good sales force. Conversely, a poor team will be a poor sales force.

Point six, concerned with giving an example that invites emulation by youths of the nation, calls to mind our

"hero worship" adolescence and early manhood. Babe Ruth, Red Grange, Bobby Jones — the "powerhouse" teams of Notre Dame, the New York Yankees, the St. Louis "Gas House Gang," were always referred to in tones of awe and respect. The local boys who made the high school and college varsities, and the local or nearby college team, small or large, were just a shade, if at all, below the national heroes in our ranking. Our aim was to emulate them. Our admiration was swayed by one thing — the man or the team that could beat our local favorites. The youths that we would have emulate Marines must have some of those same feelings.

Keeping points one and six particularly in mind, the aforementioned program is designed to keep the public conscious of the Corps and its activities; a far more difficult undertaking than in war-time when the front pages of every newspaper carried the famous Joe Rosenthal picture of the flag-raising on Suribachi. One means of keeping the public "Marine conscious" — and I emphasize the *one* as one of many — is through the American love of athletic competition. Look at our daily newspapers. Usually, they are divided into news, sport, and comic sections. Notice the percentage of printed news (not counting ads) that the sport section contains in any paper. While it varies from paper to paper, it is, to say the least, a considerable percentage. Why? — The American love of competition has made sports a major recreational industry. To tabulate the attendance records of the past year at all football, basketball, and baseball games would be a herculean task, and only confirm our impression — that they were tremendous figures. This love of competition and respect for a winner has then, percentage of newsprint and attendance records as a measuring stick.

☛ TO SEE ITS VALUE to the Marine Corps, let us take Quantico as a case in point. Starting slowly at the beginning of the '48 season, and damned with the faint praise of "just a good service team," Quantico's football team gathered momentum and respect as the season progressed. Xavier University (Cincinnati), Wayne University (Detroit), and St. Francis College (Johnstown, Pa.), along with other Marine, Navy, Army, and Air Force teams, fell by the wayside as victims of the team. With each win, and as the caliber of the opponents increased, increased space was allotted to Quantico's doings in the sports section of the Washington papers.

The sport section of the newspaper was the medium used to make the public "Marine conscious" by trading on the Americans' love of competition. A public relations beachhead was established and the men who read Washington papers must have noticed and mentally recorded the fact that "the Marines are pretty good." This impression should have been crystallized on December 18th, when the Quantico Marines met and defeated the

previously unbeaten 82d Airborne Division (Fort Bragg) at College Park, Maryland, in what was termed an "unofficial All Service Championship." This game was the featured sport page article. Meanwhile, in defeating Wayne and Xavier the team certainly impressed the citizens of Detroit and Cincinnati with the fact that the Marines were still around and "just as good as ever." We are helped in this by the propensity of sports writers to indulge in superlatives — "fighting as they did on Saipan (or Tarawa, or Guadalcanal), the Marines conquered a stubborn foe today at _____ Stadium when they trounced _____ University 13-7." What could be better than, in one sentence, the recollection of past glories and the attention directed to present superiority?

However, most moral philosophers agree that, as a guiding principle, "The end does not justify the means" is a better tenet than "All's fair in love and war." Such things as the "due process" clause and the "Rules of Land Warfare" give evidence of that. Thus, we are not justified in building an athletic team for the glorification of the Marine Corps at the expense of training men, or of carrying out the assigned mission of any particular unit. But it is held that organized athletics are a positive step in the direction of high morale, or, as we prefer it — esprit de corps.

Concerning esprit de corps, Gilbert Bailey, author of *Boot*, which described the war time training of Marine recruits at Parris Island, returned there recently (as a civilian) to see what changes, if any, in their indoctrination, had been made. The impressions of his visit were reported in the *New York Times* on January 16, 1949, under the title *The Marines Still Have the Situation in Hand*. Certain sentences stand out:

"... But down on this flat sandy island where the streets are named for far-off battlefields, the marines are as elite-minded, salty and resolute as ever, no less amphibious in outlook than they were before the days of the long-range bomber. ... In the fall of '42 the Marine Corps and the uninviting rigors of its training were accepted on faith, if not honored, by a grateful public that thought of war as beachheads and fighting Leathernecks. Today the beachhead, the amphibious tractor, the marine specialist, his M1 rifle and his supreme pride all seem less important to national security. Military experts who visualize all possible wars of the future as air wars or pushbutton wars have raised the point of abolishing the Marine Corps or perhaps absorbing it gently into the Army. ... The marines are still the rugged individualists of the armed forces, uncompromising and resolutely proud of their reputation as a fighting outfit. ... Unlike the 'new Army,' the marines make no pretence of training men for peace. ... The tempo of Parris Island training suggests that the enemy is at the gates and the marines need replacements to hold him off. ... Every boot

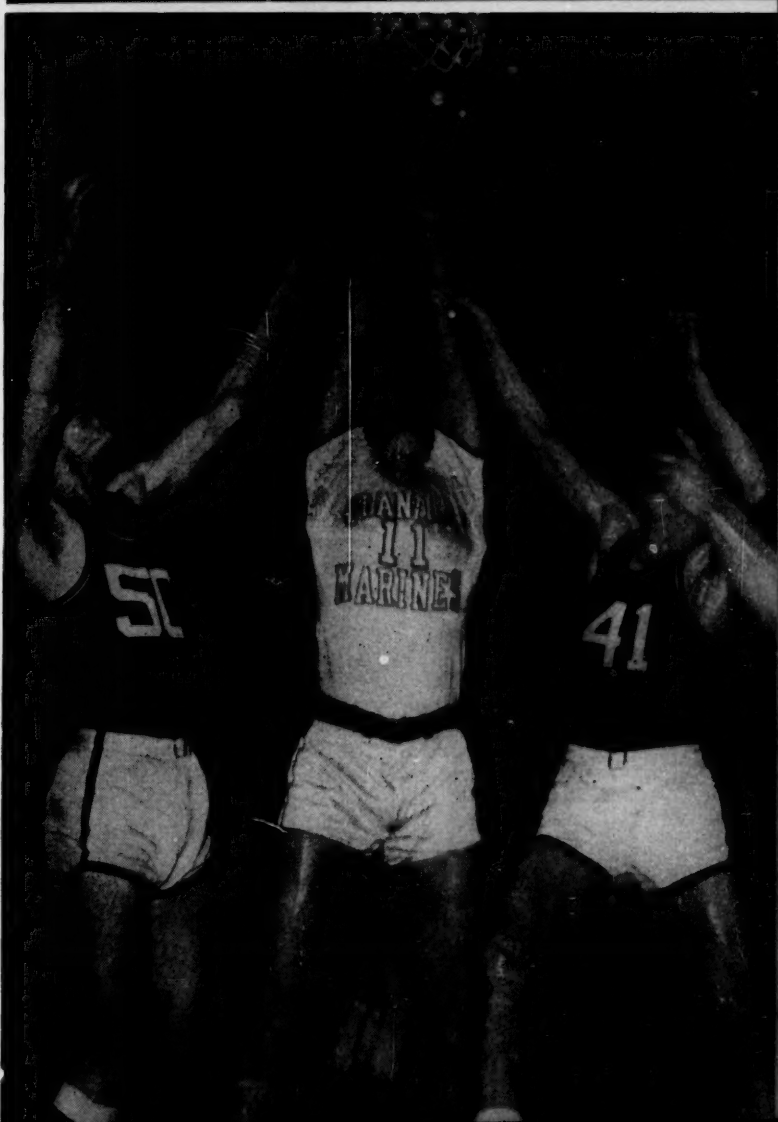
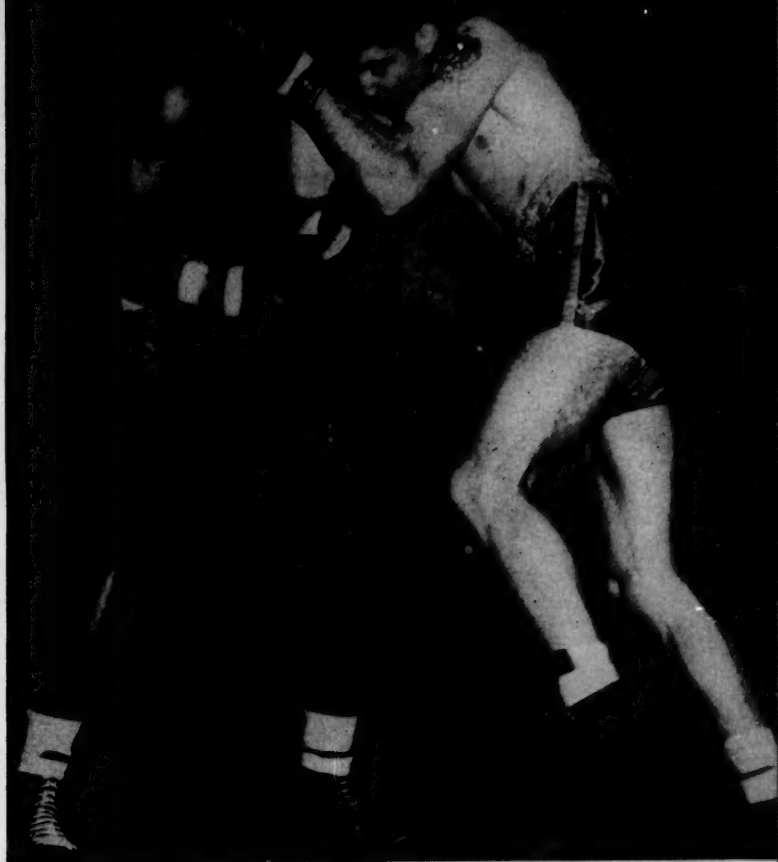
is given to understand that he is a member of the finest. He is the best disciplined, the best trained, the best dressed and — if the occasion demands — the roughest character who ever donned a cartridge belt. He can outshoot a 'swabbie' and outfight a 'doggie.' ... 'You teach a recruit that he is to be a superior fighting man, that he has much to be proud of. Then you give him something — the kind of training — that he can be proud of. You make him pay a price for membership in an organization with a reputation to uphold. And he will uphold that reputation at all costs because it is his own.' ... To give him the confidence and the obsessive sense of duty (or obedience) which he needs under fire, you must — some time before he goes into combat — put him through an experience he can be proud of, something he won't forget. ... As MajGen Noble sees it 'I think there is a reason why we were willing to land on Guadalcanal after the Army said it wasn't ready. We knew that no matter what happened, the marines down at the bottom of the pile would come out on top.' ..."

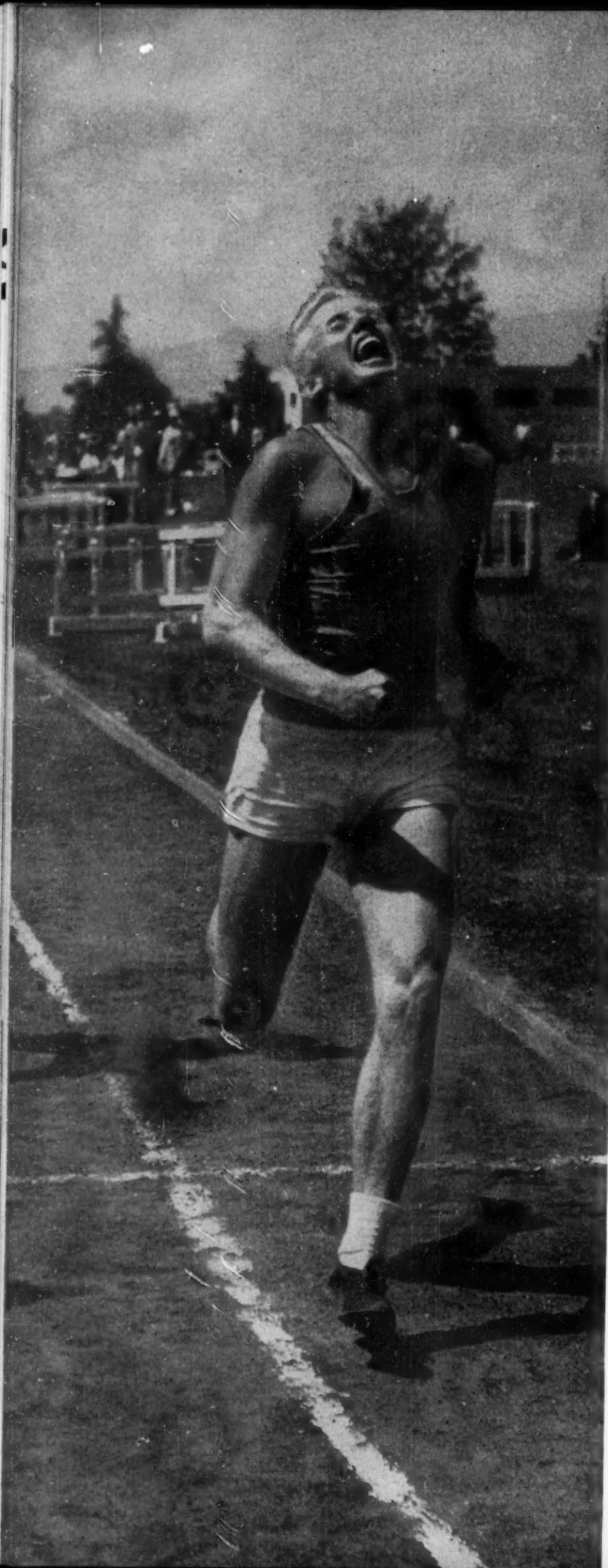
In Bailey's opinion, those thoughts are fixed in a marine's mind at the completion of "boot" training and contribute to his esprit de corps. "elite minded ... grateful public ... pushbutton experts abolishing the Marine Corps ... rugged individualists, resolutely proud ... no pretense of training for peace ... the enemy at the gates ... Marines to hold him off ... member of the finest ... best dressed, best trained ... roughest character who ever wore a cartridge belt ... outshoot ... outfight ... superior fighting man ... his own reputation gives him confidence he needs under fire ... the Marines come out on top."

☛ **DRILLS AND TRAINING** when he joins an organized unit are designed to keep his qualifications abreast of his spirit. Competitions, individual and unit, keep him sharp; against time in field stripping a rifle blindfolded; against 185, 207, and 218 in requalification firing; against the next squad, platoon or company in smartness on parade; in speed and skill of performance in training exercises; and against the other team in intra-mural sports.

All training is toward the end of making the marine a better one than before — better trained, better qualified for his particular assignment. The reader might well ask here — "What has that to do with justifying *large-scale athletics*?"

Just this: — In addition to his training, the good marine is one who takes pride in the Corps as the cream of the service crop. Athletics can assist greatly in this. The post athletic team in any sport should be good enough to give him strong competition in the sport as a player; to provide him with good entertainment as a spectator; to give him a team of which to be proud as representative of his service. Further, the presence of a strong post





team awakens the Marines' latent interest in sports and the intra-mural program benefits from a greater number of participants. The Corps benefits internally from this cultivation of the competitive instinct and — as success breeds success — the post team benefits from the intra-mural program in that the intra-murals develop and give experience to potential post team material and the cycle repeats ad infinitum. Consequently, the Corps benefits externally from the favorable publicity that the winning team attracts. It sounds like a simple formula, that, if followed, would guarantee each post a winner (and the resultant publicity) in every sport; yet, obviously, there must be some losers (one for each winner, as a matter of mathematical fact). But, good teams do not come without some emphasis. How far should we go in placing this emphasis? — Let us analyze the situation.

❖ NOT ALL POSTS and stations can have winners in all sports. The Marine divisions, air wings and large bases such as Marine Corps Schools have a distinct advantage in developing high caliber teams in football and baseball because it stands to reason that, under the laws of probability, it will be easier to find eleven or nine highly competent players among 2,000 men than among 200. However, basketball, where only five men can play at one time, is an excellent sport for the small-to-medium sized post or station to emphasize. Track and field, boxing, tennis, and golf, where the competition is individual, give even the smallest post, station, or detachment the opportunity to send at least one representative in the sport into all-Navy or inter-service competition wearing the colors of that post, station, or detachment. A realistic appraisal of the facilities at hand, and the material, both playing and coaching, available will quickly determine the sport or sports to which the unit can lend vigorous support with good chances of success. A realistic appraisal, too, of the competition should be made to avoid such embarrassments as Quantico 64—Fort Benning 0. In short, part one of the formula is to pick the sport for emphasis to which the facilities available lend chances of success and attempt to schedule opponents — with an eye to providing good competition (service or civilian) for the player and good entertainment for the spectator — that offer approximately equal potential. Good competition is a relative matter — the pennant race in a Class B minor league is just as intense and just as entertaining as in the National and American Leagues when the teams comprising the leagues are as evenly balanced in strength. This does not preclude participation on a smaller scale in sports where the potential is not high, but it does mean that when athletics conflict with primary duty requirements, but limited favoring of a single sport might be possible, the preferred sport should be the last to suffer. Schedules should take account of that.

But it is part two of the formula for emphasis that brings forth the cry "G— d— jockeys!" from the

dissenters. 1stLt Joseph J. Doaks, backfield coach of the post team, cannot keep a good guard running from the OOD's office, and still be present at football practice; Sgt John Green, property sergeant, cannot physically be present in the storeroom all afternoon, and at the same time run through the assignments of the left end in the squad drill; PFC William Smith cannot carry the BAR through the boondocks in the afternoon when the rest of the guards are learning the fundamentals of blocking and tackling and still be as accomplished a performer on Saturday with the team. So Lt Brown, Cpl Blue, and PFC Black (who are not engaged in athletic endeavor) are detailed to relieve Doaks, Green, and Smith during the hours of practice or while the team is on a trip away from the base—and the weeping and gnashing of teeth can be heard for miles. The "jockeys" become the innocent victims of circumstance; even though their labors on the ball field are just that—physical, grinding labor, usually long past the working hours of the post, and the training requirements of the sport usually deny them the pleasure of a cool brew or two after practice, or a liberty run to the nearest center of night life—not for the one evening that their given relief necessarily forfeits, but for a whole season. On Saturdays and Sundays they toil extra hours for the pleasure and entertainment of those reliefs and the rest of the command and nurse the bruises and sprains resulting therefrom. True, they enjoy it. But they have not avoided any work, and in practically all cases, have let themselves in for harder work—but in a different place. However, the result of their work is not apparent until after the game, and by that time, even though Brown, Blue, and Black may have enjoyed the game they have also worked up a good grudge, perhaps tainted with a little envy at the cheers, against the athletes. Far better that they philosophically apply the chemical law that "nothing can be created or destroyed but only changed in substance" to the case and realize that their extra performance or assistance that enabled Doak, Green, and Smith to practice has been returned to them in the form of increased enjoyment at the game, increased pride in their outfit from the knowledge that the team represents them, and, in the final analysis, contributes much to the furtherance of a cause in which they believe.

☛ SO, PART TWO of the formula for success turns out to be "give the team the backing it needs." Within all feasible limits, make it easy for the team to get to practice regularly, even if it means some small discomfort to non-participating individuals whose return for value given may be deferred, but in some way or another will be realized. If possible, establish a mess schedule which might allow for a late or irregular chow for those engaged in the sport. Provide the equipment necessary for the protection of the players. Simple enough, but very necessary.

Let us again use Quantico as an example and see how the formula operates. First, analyze the material prospects. Prominent among the schools is The Basic School, and among the students a good percentage are graduates of the Naval Academy and other colleges. Trading on the law of averages again, we can reasonably expect that several of these students will be players with college experience in any given sport. Eleven footballers, still young enough to be very active in strenuous sports, were in the 5th Basic Class. Further, the size of the entire post (including MCAS) indicates that there will be interest enough to guarantee participants in practically all sports.

☛ SCHEDULES ARE MADE with regard to the calibre of team reasonably expected, including colleges when possible (the team averages with colleges in the combined experience of officers and men), and the strongest service teams available. To facilitate practices, candidates are released from duties in time to meet the scheduled practices, or in the case of students, immediately upon completion of the day's instruction. Special meal hours are arranged because practices continue long beyond the regular evening chow hour. Those two concessions comprise the only variation from the regular routine of all marines on the post.

That it is an effective formula can best be proved by the results—such as the number of All-Navy trophies resting at Quantico.

That this emphasis on athletics has provided good recreational entertainment for the post as a whole can be shown by attendance records.

That it has been a factor in increased participation in intra-murals is shown by the number of teams now participating in intra-mural sports.

That it engenders a real esprit de corps can be shown by two particular cases: When Special Services at Quantico obtained 800 tickets for the All Navy finals at Norfolk, roughly 160 miles away, every ticket was sold; and when the unofficial All-Service game was played at College Park, the Marine Corps side of the stadium was filled.

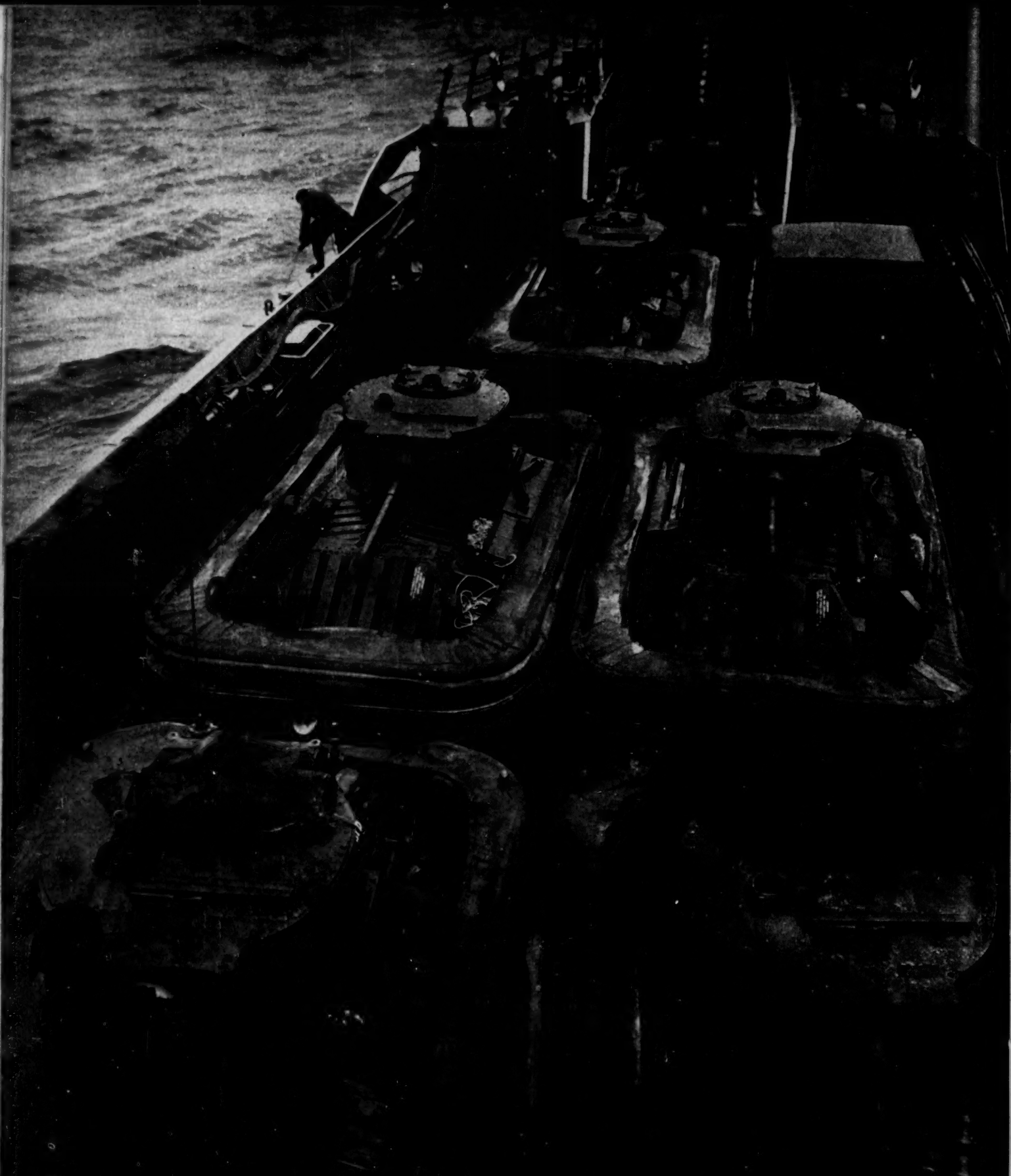
That it incidentally, but far from unimportantly, serves another great need of the Marine Corps in placing the Marines in the public eye favorably is attested by the coverage given Quantico in Washington and other papers, plus such items as the far and wide radio coverage commanded by Bill Stern and NBC on such occasions as the aforementioned All-Navy Finals in football.

That the Corps will benefit, internally and externally, from an emphasized athletic program along the foregoing lines at every post, station and detachment in some, if not all sports, is the first contention of this writer.

That these benefits outweigh the inconveniences incident to such a program is the second.

The defense rests.

USMC



British DDs embarked in LCT with flotation device lowered. Inability to fire during run-in is its disadvantage.



Raised canvas screen prevents DD tank from firing while waterborne. Is lowered on beaching so tank can fire.

What About Landing Tanks?

By Col Robert H. Williams

Photographs courtesy of Imperial War Museum

I HAVE READ WITH INTEREST TWO RECENT ARTICLES in the GAZETTE. The first entitled *Strengthen the Beach Assault* by LtCol A. J. Stuart, urged the landing of tanks in the first assault waves. The second, *Mines: An Amphibious Threat* pointed out very realistically the increased mine problem which is apt to confront the commander who wishes to land his tanks in the leading assault waves in a future war.

I accept the facts and premises of both articles. I agree that we must land tanks earlier and in greater numbers in order to give the assaulting BLT close tank support much sooner than it got it in the Pacific during World War II. I agree likewise that lanes must be cleared across mines and obstacles before tanks can get across them. I further incline to the optimistic belief that when the new flail and blast-proof antitank mine confronts us the means to deal with it will also be quickly developed — that is the mechanical device which will replace, for example, the flail. That, however, is not the

whole story. In addition to the mechanical means we must develop a technique to use it efficiently. So far as I know we do not have such a technique, but there is one, and I believe that the Marine Corps should experiment with it.

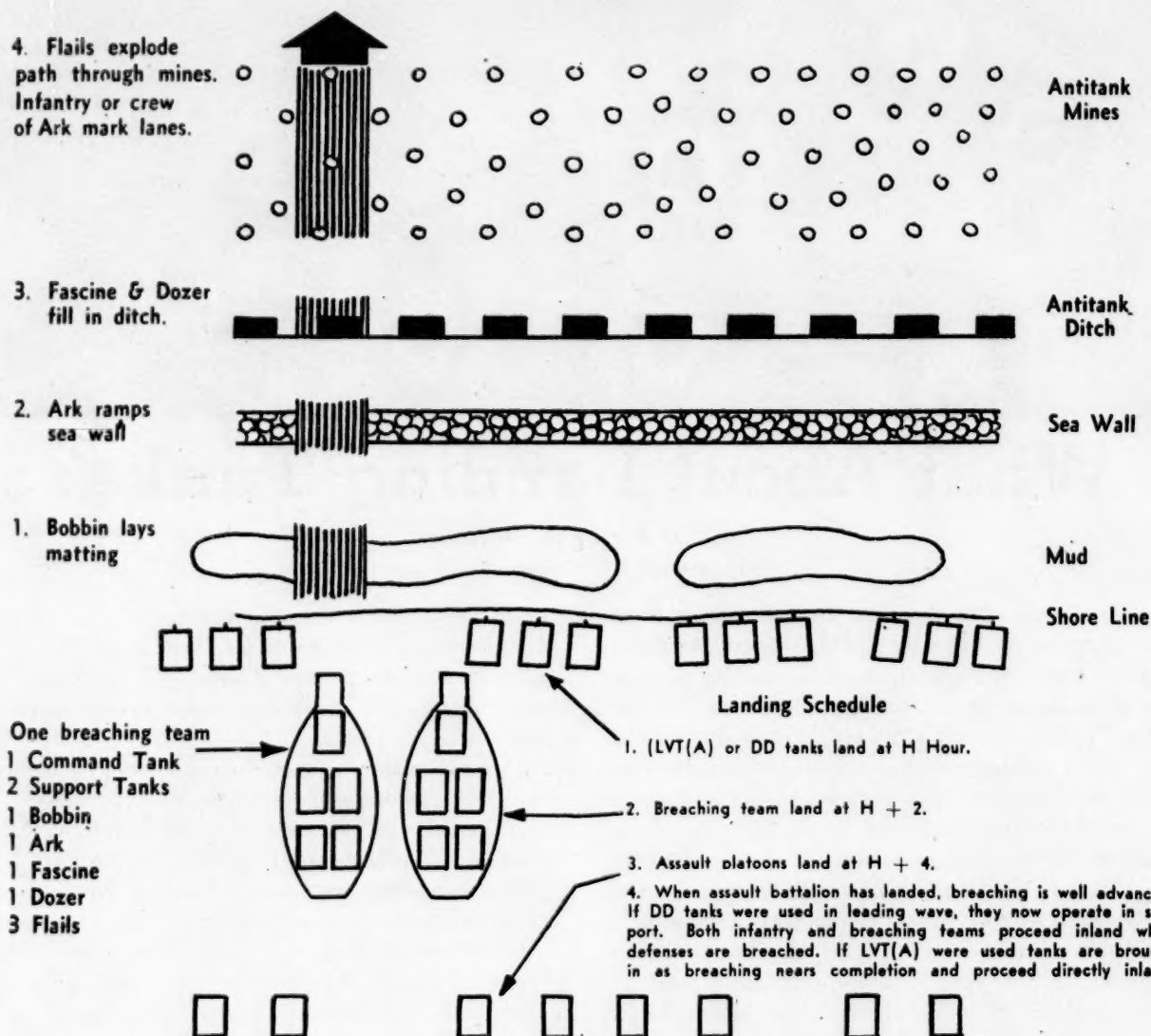
During the last war there was very little inclination to land tanks before infantry in the Pacific Theater. Our doctrine held that tanks should be brought in as early as possible after the assault battalions. In the ETO it was the usual practice, particularly with the British, to land tanks in the leading wave. For this purpose the DD (Duplex Drive) tank was used. They were launched from LCT about 6,000 yards from the beach and swam in with the aid of flotation devices. They could not fire during the run in if equipped with the British flotation

Col Robert H. Williams is at present the U. S. Marine officer on the staff of Britain's School of Combined Operations.

THE BREACHING OPERATION AGAINST A STRONGLY DEFENDED BEACH

FIRST INFANTRY OBJECTIVES

TANKS DEPLOY HERE AFTER CROSSING MINES AND OBSTACLES
IN COLUMN BEHIND INFANTRY



AMORIT-49

device. If obstacles and minefields had to be crossed these first wave tanks remained on the beach and supported the infantry assault by fire until the breaching teams, which had landed in the leading wave with the tanks, had cleared paths for them. When this had been accomplished, the tanks crossed the mined area and obstacles in column, re-deployed beyond and were able to afford the infantry close support. During this breaching operation the infantry pressed on inland, disregarding antitank mines and accomplishing the passage of obstacles and anti-personnel mines on their own. The Marine Corps partially solved the problem of early fire support for the infantry from the water's edge with the LVT(A). In fact the LVT(A) was superior to the DD during the run in because it could fire while afloat and had better sea keeping and navigational performance. Once on the beach, however, the LVT(A) has more or less had it until the next landing operation because of its vulnerability, and bows out of the picture. The DD, on the other hand, having struggled manfully in an element for which it was not designed, emerges from the deep prepared to carry on in the land battle. From the standpoint of economy the DD scores. It avoids the necessity for building and maintaining a highly specialized vehicle with a very limited use. It economizes on shipping space, since the DD performs the functions of two vehicles in our system, and it also saves manpower. If improved flotation devices can enable the DD tank to fire effectively during the run in there would appear to be no continued requirement for the LVT(A).

☛ CONVERSELY, since we have the LVT(A), and if we continue to use it, there seems to be no requirement for the DD tank in the Marine Corps. If we want to land tanks before infantry, let them arrive in LCT. If we have LVT(A) in the leading wave to provide initial support there would seem to be no reason to land tanks first unless they can continue right on inland. If there are no antitank obstacles and mines this is feasible. In this case let us land tanks first for a quick, deep penetration. But if the landing beaches are well defended there will be obstacles and mine fields. Before the tanks can cross them it will be necessary to undertake breaching operations. Rather than complicate a landing schedule further and overcrowd the beach still more, why not land them



British troops give a demonstration of breaching tactics. In the background can be seen a mine-clearing flail tank and an AVRE with special bridging device.

as we have in the past, after the assault battalions, at about the time we can expect the breaching operation to be completed?

If we continue to use the LVT(A) there appears to be a choice of two methods:

- (a) The infantry assault goes in first preceded by LVT(A)s. When the beach area is sufficiently cleared, engineers with ordinary engineer equipment are brought in to clear paths over obstacles and minefields after which tanks can land and proceed inland to ground where they can deploy to support the infantry who meanwhile for some time, perhaps two hours, have fought unsupported by tanks with a consequent slower rate of advance and a higher cost in casualties. This method we are familiar with.
- (b) Land breaching teams with the leading wave of LVT(A)s. They will immediately begin to clear a path while the assault infantry is landing. By the time the assault battalions are entirely ashore at about H plus 20 the breaching operation should be well advanced. Tanks can be landed in LCT, cross the obstacles and mines to terrain where they can deploy, and be in a position to render close support to the infantry much sooner than in the first method.

So far we have been considering only the infantry task. In most of the operations in which the Marine Corps participated in the Pacific in World War II there was very little use for armor. However, in amphibious assaults on land masses where the landing is but the preliminary to a vast land campaign the early landing of armor on D Day to effect a rapid and deep penetration before the enemy can move his reserve is desirable.



Attack on Le Havre. A special device for bridging streams, bridges, etc., is fitted to Churchill tank.



ABOVE: Bobbin unrolls and lays coir matting to enable tank to cross mud or soft ground. **BELOW:** Fascine and armored dozer can cope with antitank ditch.



Especially so if airborne troops are dropped some miles inland since it will be desirable to make contact with them as quickly as possible. If armor is to be landed early in the day and get away fast, inland paths through obstacles and minefields must be made quickly. Every consideration seems to point towards the employment of breaching teams which can be landed with the leading wave of LVT(A) in order to begin the breaching task as quickly as possible.

Breaching operations require special armored vehicles which are simply modified tanks. Different types are necessary to deal with different obstacles. Breaching teams are composed of such types and numbers of special armored vehicles as will be necessary to accomplish the particular job in hand as disclosed by aerial photographs and other intelligence agencies. In the British Army these special armored vehicles are called AVRE (Armored Vehicle Royal Engineers) and are manned by that corps. Useful types are the Bobbin which unrolls and lays coir matting in front of itself to enable tanks to cross soft ground or mud; the Ark which has ramps fore and aft to enable vehicles to get over a sea wall which can not easily be demolished; the Fascine which in conjunction with the armored dozer can cope with antitank ditches; the Bridge which can span a small stream. Flails for exploding mines, and flame and petard tanks for support, particularly for dealing with pillboxes, are also included in the breaching team. Each team has the task of preparing one path across the obstacles and minefields. Three teams are allotted to each assault infantry battalion beach in the hope that at least two will be successful. The three teams on each battalion beach are under a tank officer for general coordination. In the British system the breaching teams are not attached to the infantry battalion commander on whose beach they operate. They are not even considered to be in support. The breaching operation and the infantry assault, although they take place simultaneously and in the same area are in reality almost entirely unrelated.

The diagram shows the sequence of the breaching operation of one team. At present the special vehicles cannot utilize flotation devices of the British type and must be landed in LCT or LSM. From the naval point of view it is not desirable to beach craft of this size at H Hour. On the other hand, even if they could be duplex driven it is doubtful if it would be satisfactory to land a number of separate vehicles whose functions are so closely integrated by the somewhat haphazard method of swimming them. This uncovers, incidentally, what appears to be a mild inconsistency in the British system. For, if breaching teams must be landed in craft, why not also land the first wave tanks in craft? The answer is a naval one.

The beaching of sufficient craft to land the specialized armored vehicles of three breaching teams per battalion

beach at H Hour was acceptable from a naval point of view during World War II, because the Landing Force considered it vital. If the first wave tanks, about twenty per battalion beach, had also been landed in LCT, the beach would have been too cluttered with major landing craft at the time the leading waves of infantry were coming in. In addition of course it would have meant a further aggravation of the already undesirable necessity of having to beach any major landing craft at all at H Hour.

Now I realize that there is nothing new about the various types of armored breaching vehicles described above. At one time or another during World War II the Marine Corps may have used each type. What is new to us, so far as I know, is the organization of such vehicles into breaching teams with a standard operating procedure, and practicing the technique of landing them with the leading wave in order that the clearing of paths across mines and obstacles for tanks may begin as quickly as possible, with a view to giving the assault infantry close tank support sooner.

At this point some readers may well ask, why bother with this H Hour breaching business at all? Could it not be better accomplished during the pre-D-Day preparation phase by the Advance Force? If required, obstacle clearance and mines could be dealt with during the UDT reconnaissance. The answer is yes, indeed — if there is a pre-D-Day preparation. But let us not forget that this is only a tried and true device when the objective can be sealed off from reinforcement from the enemy's general reserve. In the latter part of the Pacific war this was easy. The Japs could not reinforce the garrisons on their island strongholds because of our overwhelming superiority in air and sea power. Surprise could be subordinated in favor of the application of a great concentration of force and the loss of surprise could have little effect on the odds. These conditions did not obtain in the ETO where the landings were only the preliminaries to prolonged land campaigns. There, surprise could not be disregarded. If surprise were lost before D Day the enemy could have put his reserve in motion thus getting a head start in the critical build up of the first few days, reducing the odds against him and jeopardizing the success of the operation.

It is possible that in a future conflict the Marine Corps will provide the assault element for a landing on a land mass where conditions such as obtained in the ETO rather than those in the Pacific in World War II will confront us. The commander may well reject the pre-D-Day preparation phase in order not to prejudice surprise. In such a contingency, if it is desired to get armor ashore early, obstacle and AT mine clearance will be a D Day task. Competent breaching teams landing in the leading wave may well spell the difference between success and failure.

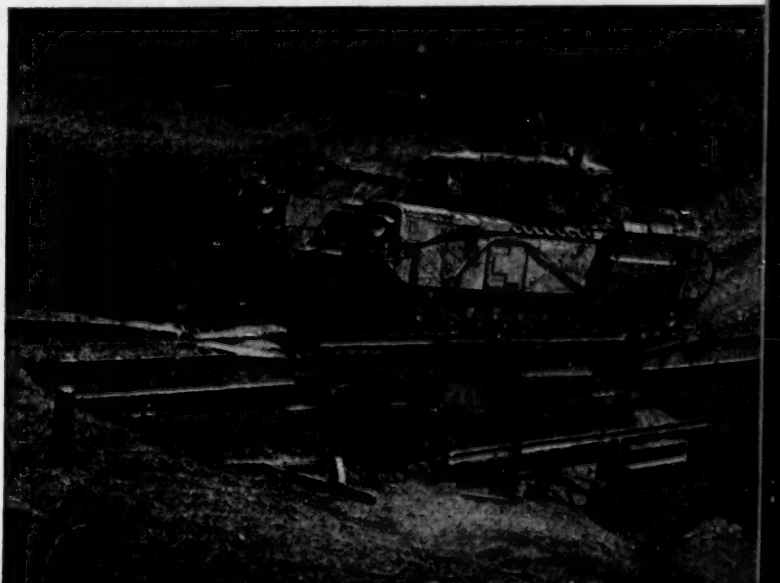
USMC



A flail tank comes ashore at Walcheren Island to clear a path for the infantry through mine fields.



ABOVE: A Sherman tank clears a path through wire entanglement. BELOW: A Churchill tank crosses the River Senio over a British AVRE bridging tank.



Goodbye "Little Dynamite"

By LtCol Robert C. Hiatt

☛ THERE WAS ONCE A MAN WHO OPERATED AN ALLIGATOR farm deep in the everglades of Florida. This farm was so remote from contact with the outside world that he became very limited and narrow in his outlook on the importance of the alligator in the economic and social structure of the nation. In fact, he advocated that the male alligator was man's best friend and based his theory on the fact that the female alligator laid 5,000 eggs a year, that the male alligator ate 4,500 of these eggs each year, and that if it wasn't for the gastronomic orgies of the male alligator, civilization would be up to its knees in live alligators.

In the March issue of the MARINE CORPS GAZETTE, we encounter an intellectual alligator farmer in Capt Thomas N. Greene's article entitled *Little Dynamite*.

That Capt Greene loves "Little Dynamite" is quite understandable. It is a poor artilleryman who doesn't love his guns, and as a battery executive officer and later a battery commander, the writer was very proud and extremely jealous of the four "Little Dynamites" that constituted one-sixth of the artillery strength of the Marine Corps on the West Coast. It was conclusively proven that the 75mm pack howitzer could be landed from a 40-foot whaleboat, assembled and fired in less than three minutes. Of course, there is a trick to it, and the technique employed is not adaptable to the amphibious assault.

It can be generally stated that three lessons were learned during World War II concerning amphibious operations. First, it was proven to the satisfaction of the Japanese and the Germans that an amphibious assault could be made against the defended beach by using the combined supporting arms of air and naval gunfire. Second, improvements and developments in landing ships

and craft and the development of landing tactics and techniques have enabled the amphibious unit to land powerful supporting arms in the assault. Third, it was proved to the satisfaction of the Marine Corps that the amphibious unit must be tactically and logistically self-supporting and that the trick of amphibious operations was staying on the beach once the landing has been made. This last lesson will prove increasingly difficult in the future in view of the developments in armor, armament, and atomic weapons.

In *Little Dynamite*, the observation is made that obtaining overhead cover and mobility by the use of modified tanks, self-propelled guns, and armored personnel carriers inevitably leads to the formation of an armored division. The question is posed "Is this what the Marine Corps needs?" If the amphibious armored division is the answer to the VT fuse and to the threat of hostile armor during the amphibious assault to the build up phase of the amphibious operation, then the answer is unquestionably "yes."

We are reminded of recent writings and publications on beach mines making amphibious landing an extremely hazardous undertaking. To complete this picture, it would be well to consider not only mines but defended beach obstacles, hedgehogs, tetrahedrons, and all the other type devices designed to deny the landing force access to the beach. Recent developments in projected beach clearing devices have indicated that this problem is under consideration, and that an answer of sorts has been obtained. One such device was in production in July of 1945 and a limited quantity is on hand at the present time. Continued development in this field in both the obstacle clearing equipment and the technique of beach clearance may possibly minimize this hazard.

☛ THE OBSERVATION that a fleet is large enough to attract an atomic bomb is an observation that indeed has merit—if the enemy has an atomic bomb that he is willing to expend on a fleet target and if we are foolish enough to tempt him to do so by setting up such a target. As to hostile artillerymen rubbing their hands in fiendish glee upon seeing a tank target, it would be well enough to consider (1) the probability of obtaining a direct hit on one of several moving tanks by placing an artillery concentration on them, and (2) reflection in the fact that usually only a *direct* hit will stop a tank. Capt Greene's "Little Dynamite" could better be employed against tanks by forming the gun crew into a skirmish line and throwing rocks. The possibilities of both hitting and damaging the tank are about equal. As to the effect of the airplane against tanks, the experiences of the Russians in employing their fighter craft against German armor could be taken as a yardstick as to the effectiveness of this method of antimechanized defense. The Russians, who should know, have concluded that since the attacking fighter

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To effect a tank kill and to stop armor, a weapon with more striking power than our present 75mm howitzer is needed.



Russian 76mm is a high velocity rifle. Designed primarily as an antitank gun, it is also an infantry support weapon.



craft could register only two per cent hits on a moving tank target, the best weapons to counter tanks was the tank itself. To effect a tank kill and to stop armor, a weapon possessing heavy hitting power and penetration capabilities is necessary. Either a high velocity weapon such as a German 88 or a heavy projectile weapon such as the 155mm assault gun is necessary. Unfortunately "Little Dynamite" is neither.

That the 75mm pack howitzer can be man or mule packed and placed in impossible positions, easily landed over difficult beaches, and emplaced in very little space are admirable characteristics lending well to the amphibious assault. It is an accurate weapon but hardly to the extent claimed by Capt Greene. However, the

81mm mortar also possesses these characteristics and in addition to being highly transportable, can be concealed so that it is virtually impossible to locate without special detection devices. It, in effect, is a stovepipe shooting out of a hole and can be served by a smaller crew than that required to serve the 75mm pack. It is well to point out that while mobility is a necessary component of a military action, it is no defense against the VT fuse.

The comment on the experts who, in mathematically computing that firing fewer and bigger shells will achieve more fire power, overlooked the known error in the point of impact of the heavier calibered weapons, is without basis. Both the 75mm pack and the 105mm howitzer have a known error for any given range but in consider-



105mm howitzer is standard Marine Corps artillery piece. Limited supply of weapons available early in the war prevented the arming of divisional artillery with the approved three battalions of 105s.

ing bursting radius, fragmentation, and shock power of the heavier calibered weapons, little weight can be placed on the conclusion that the experts were incorrect in their computations. The personal combat experiences of Capt Greene cannot be discounted, but his observation on the accuracy differentiation between the 105mm howitzer and the 75mm pack is subject to challenge. Many artillerymen, including the writer, have adjusted 105mm and 75mm fire during the past war, and Capt Greene's observation is indeed unusual. The opinion is expressed that Capt Greene stands in minority of those artillerymen who have adjusted fire under combat conditions. As his battery or battalion commander, his reluctance to bring artillery fires into the limit imposed by the bursting radius and probable error of the weapon he is employing would be viewed with a jaundiced eye.

That the 105mm got its first test as a basic field artillery piece on Iwo Jima is an ambiguous statement of fact. The limited supply of artillery pieces made available to the Marine Corps prevented the arming of the divisional artillery with the approved three battalions of 105 and one battalion of medium artillery. The 105mm howitzer was used in the Marine Corps by the 3d Division on Bougainville and later on Guam prior to the Iwo Jima operation. It was also used by the 1st Division on Peleliu

and was thoroughly tested in amphibious operations. The Army employed the 105mm howitzer in the Pacific on Guadalcanal, Guam, New Georgia, and other operations, not to mention its employment in an operation somewhere along the coast of Normandy. The technique of loading the 105mm howitzer in DUKWs had long been developed prior to the Iwo Jima operation. The question of whether or not the 75mm pack howitzer could have better supported "John Rifleman" on Iwo Jima by getting more hits on pill boxes than the 105mm howitzer by using the AP shell should cause no arguments such as is created between match shooters on the respective merits of the '03 and the M1. Hitting a target is the end result of aiming, shell velocity, and trajectory rather than the difference between a HE and AP shell.

Present standard light field artillery is a far cry from the "Pre-World War I era" as is claimed by Capt Greene. The present divisional artillery organization was adopted from the German divisional organization of three 10.5-centimeter and one 15-centimeter howitzer artillery battalions. That the Russians and the Germans used rockets to increase the range of their artillery is a new and interesting tidbit of information and research fails to substantiate it. That such is the case on a practical basis is doubted. The variables introduced into the bal-



Soviet 122mm howitzer compares with our 105. The Russians used 5,000 pieces and fired 700,000 rounds in one day, in their first assault against the Germans outside Stalingrad.

istics of rocket-boosted field artillery projectiles are unsolvable at the present state of development of rocket fuels. Accuracy would be reduced to an uneconomic and unpredictable level. It could be that Capt Greene was thinking of the German method of World War I in producing "Big Bertha." By increasing the caliber length of the tubes and the chamber pressure capacity of an 8-inch gun, they increased the muzzle velocity and range. The same principle applies to redesigning the pack howitzer for increased range. The tube must be made longer and a heavier and larger breech block designed to stand increased chamber pressure. The pack thus ceases to be a pack howitzer, and we are back where the pack howitzer started — the French 75mm field gun. The observation as to the shortcomings of the LVT(A) as a weapon to provide the close support artillery fires is indeed correct. However, the LVT(A) has a definite function in the amphibious assault and is the forerunner of a more versatile heavier armored vehicle to provide the close support fire necessary for the infantry after the planned close support fire of naval gunfire and air bombardment have been lifted. It is predicted that a self-propelled artillery weapon, organic to the divisional artillery, capable of being equipped with "T-6" flotation devices will be developed and adopted for this purpose.

The role of recoilless rifles of heavy caliber in the amphibious assault cannot be overlooked and their use in providing this close support fire for the infantry will become increasingly important in amphibious operations in the future. The limiting features of excessive "flash-back" and low muzzle velocities can be expected to be overcome, and its employment as an organic weapon in the infantry company will eliminate the need of "Little Dynamite" in this supporting role.

In summary, the development of tactical and logistical self-sufficiency in amphibious operations should be the goal of the Marine Corps, and, in peacetime, the goal of the Marine division. The development of armor and armor tactics, the VT fuse, and rapid strides in refinements of recoilless and rocket type heavy caliber weapons will confine the 75mm pack howitzer to a limited, restricted, and special weapon role. There is a need for the 75mm pack howitzer in future amphibious operations as there is a need for all special type weapons which can be advantageously employed under certain conditions dictated by the terrain, hydrography, weather conditions, and the disposition of hostile defenses. However, as the standard light artillery weapon, "Little Dynamite" has joined the honored ranks of the musket and the cutlass.

USMC



TRI-MOTOR FOKKER, used by Marines in Nicaragua in 1928, had a payload of one ton or eight men and gear.



THE LATEST type transport is the Fairchild C-119B. Marines have eight undergoing tests at Patuxent NAS.

Resupply By Air

By LtCol Jacob G. Goldberg

✻ "THE DAY OF THE SURFACE SHIP IS GONE! THE AIRPLANE HAS (OR SHORTLY will) replace the ship. Amphibious operations are obsolete—in their stead airborne operations will become doctrine!!!"

While not a direct quote, the above is the substance of pronouncements by prophets who have risen since the conclusion of World War II, as they invariably do after every war, to give a bewildered and questioning world the benefit of their superior wisdom.

What effect will the atomic bomb have on the resupply phase of future amphibious operations? The advent of this new weapon of war has, the author believes, outlawed huge concentrations of shipping at objective areas such as Okinawa

Fortunately, there are other prophets who believe that there will be amphibious operations in the future and that, provided procedures and techniques are modified in accordance with the capabilities of aircraft for tactical and logistical support, amphibious operations will continue to be a primary means of attack. Let us consider, then, the manner in which the logistical support capabilities of aircraft can best be utilized in future amphibious operations.

THE FIRST INSTANCE of resupply by air by the Marine Corps occurred during World War I when units of the Northern Bombing Group (Marine Aviation) flew five missions to drop much needed supplies to isolated French units trapped by Germans. Statistics are not available as to the amount of supplies dropped but it is known that free drop was employed and was successfully executed. Our next experience with resupply by air occurred during operations in Nicaragua. It was here that parachute drop was first employed to supply Marines in isolated jungle stations with food, clothing, and other supplies. From 1932 until the outbreak of World War II it is extremely doubtful that much serious thought was given either to the feasibility of aerial resupply or to the development of its logistic potentialities. It was not until midway in the conquest of Guadalcanal that resupply by air again appeared, and then only because it was the only means available to bring in sorely needed aviation fuel and ammunition. It is here that we find the Marine Corps' first use of the "air-landed" method of resupply by air, and an awakening to the potentialities of supply by air.

In January, 1944, two air delivery platoons, each consisting of 2 officers and 79 enlisted, were organized, trained, and equipped for packaging and loading materiel for aerial resupply. A platoon was assigned to each of the III and V Amphibious Corps and both units functioned in a highly efficient manner throughout the remainder of the war, participating in nearly every amphibious assault in which the Marine Corps was involved. For each operation in which they were employed these units were normally based aboard carriers initially and moved ashore when airfields became available. With each successive operation considerable improvement was evidenced in the techniques of packaging supplies, of loading supplies and equipment aboard aircraft, and in developing more efficient delivery containers. These techniques reached a climax at Okinawa when, with

torrential rains bogging down all vehicular transportation for a period of two weeks, resupply by air became the only means of providing logistic support to front line units.

It is well, at this point, to emphasize that at the conclusion of the war resupply by air was still considered by all logistics planners as being only a temporary expedient—a means of logistic support to be used only in emergencies where terrain, weather, or enemy activity precluded the employment of normal means. We had not yet reached the stage where we were willing to raise the status of aerial supply from that of stepchild in the family of logistic means.

THEN CAME the 6th day of August, 1945. With the explosion of the atomic bomb over Hiroshima we obliterated a city and its peoples, and we set up in the minds of all martial minded men fearful thoughts and questions. Paramount of these questions was, of course, the effect the atomic bomb would have on future wars. Bringing this question down to the level of the probable future employment of the Marine Corps we may ask, "What effect will the atomic bomb have on the resupply phase of future amphibious operations?"

As yet we can only present some fairly obvious considerations insofar as they pertain to resupply during amphibious operations. The advent of atomic warfare has, it is believed, outlawed huge concentrations of shipping at objective areas such as was seen at Okinawa where eight hundred or more ships were offshore at one time. Second, such shipping as will be required for the future amphibious assault must be widely dispersed both enroute to and while at the hostile base. Third, there will be great urgency in unloading ships. Finally, as a corollary to the previous consideration, the amount of supplies carried in assault shipping must be the absolute minimum consistent with a safe operating level for the landing force until normal resupply means become operative. The problem now becomes one of how best to combat the destructive power of the atomic bomb. The author believes that the solution lies in the employment of aerial resupply during the early phases of an operation.

For the purpose of this article aircraft will be broken down to three groups—the land plane, the sea plane, and

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The Little Airlift

THE OTHER DAY, WHILE GLANCING THROUGH some old papers, I happened to see my first flight log. The first entry was 16 February, 1929, "Mosquito Dusting." The next entry was "to Ocotal," then "Ocotal to Apali," "Apali to Managua," and so on through the greater part of the book.

At this point, it will be necessary to digress so that the reader will be able to grasp the meaning of the mission assigned which might have been the first successful use of air transfer to support troops in the field. Prior to the use of these aircraft, there existed a political situation in Nicaragua that was considered undesirable to the United States. Just what was right or wrong would entail a discussion that would benefit nobody and has no place here. It would suffice to say that the mission assigned the U. S. Marine Corps was one of overcoming armed resistance and restoring law and order. This entailed widespread military operations in the field under terrain conditions beyond the description, "very rugged." It had everything that made for difficult operation. There were no roads, just some very poor oxcart trails, and not too many of those.

To overcome these conditions, U. S. Marine Corps Aviation inaugurated what was probably the first air lift in history. It was not a stunt, for on it depended operations that required men to kill or to be killed. It transported them to fields convenient to the centers of greatest unrest. It supplied them with ammunition, clothes, food, and other articles too numerous and varied to mention. It brought back the wounded or very sick and, sometimes, the bodies of those who were killed in action or died as the result of wounds received in action.

Sometime in the fall of 1928, Maj Brainard, GySgt M. T. Sheppard, and Sgt Nero "Shotgun" Winchester delivered a tri-motor Fokker to the Marine Aviation unit based at Managua, Nicaragua. Its Navy designation was TA-2. Its useful payload was equal to eight marines with their gear, or a ton of freight. This, of course, will cause many an eyebrow to lift. Compared with the wonderful equipment now in use by Marine transport squadrons, these aircraft were crude, to say the least. But, they did the job. These aircraft were high-wing monoplanes with welded steel tube fuselages and glued veneer wings. This type of airplane would be denied a type certificate today. They were considered under-powered in those days. The engines were good, but in no way could they be compared

with the equipment in use at the present time. Due to heavy loading and very rough fields, landing gear bolts sheared and engine mounts cracked. But, availability the next morning was 100 per cent. This meant working by lantern light well into the night under very crude maintenance conditions. It took a long period of time to develop this type of maintenance personnel, who with a little could do a lot.

The greater part of the piloting of these Fokkers (there were five in all) was done by Naval Aviation pilots. The mechanics acted as co-pilots. It was customary for the pilot to fly the airplane up to the hills, and for the mechanic to do the flying on the return leg. I believe the pilots received medals for this duty—they earned them. One trip back from the hills in the late afternoon during the rainy season was sufficient. There are more instruments on the dashboard of a jalopy than there were on these airplanes. They had no radios, and the beam was still something a dreamer was dreaming about. The maps were very crude, and were meant to be used by children in classrooms. The landing fields were the worst part of the whole picture. These were seldom level, and were poorly prepared due to lack of grading equipment. Quite a number of punctures in the landing gear tires were experienced due to the sharp stumps left after the land was cleared of thorn bushes.

In order to shorten ground transport, drops were resorted to. This was accomplished by the pilot flying over a drop area designated by the troops being supplied. A trap door in the belly of the plane was opened, and the supplies pushed out on the shouted order of the pilot, who made one pass after another until the whole load was delivered.

One of the more worthwhile accomplishments of this air transport outfit was supplying Capt Edson and his patrol. Capt Edson had moved up the Coco River, reaching a place called Poteca, and was practically out of supplies. Two Fokkers, loaded with rations mostly, made contact with him and dropped both loads. I happened to be on this trip. At this stage of the operation, the patrol had nothing. Within a few weeks, a fully equipped camp was built from supplies dropped by Fokkers. Capt Edson continued on to Jinotego where his whole trail-weary patrol was picked up by five Fokkers and flown back to Puerto Cabezas. They were about three months on the trail, but it took about two hours by air to return.

RWK

the helicopter. The characteristics of each type, their advantages and disadvantages for resupply purposes, and possible modes of their employment during amphibious operations will be discussed briefly. No consideration will be given to the glider since it is not believed to have any worthwhile application to the problem at hand.

In the land plane category this country has at the present time, in appreciable numbers, only one type specifically designed for airborne operations. This is the C-82, with a maximum payload of 11,000 pounds for a range of 1,000 miles. At its maximum range of 2500 miles the payload is reduced to 4,000 pounds. Of those types for which only the pilot models exist there are the C-74, with a maximum payload of 45,000 pounds at a range of 500 miles and with a 5,000 pounds payload at its maximum range of 5,000 miles; the YC-97, with a maximum payload of 33,000 pounds at a range of 1,000 miles and at its maximum range of 4,000 miles a payload of 5,500 pounds; the YC97A, with a maximum payload of 46,000 pounds at a range of 500 miles and at its maximum range of 4,000 miles a payload of 6,000 pounds; and finally, the XC-9, with a maximum payload of 100,000 pounds at a range of 1,000 miles. These figures are quoted primarily to indicate the rapid reduction of payload with increased range.

Any or all of the above airplanes could be employed successfully and efficiently in parachute dropping of supplies or in air-landing supplies. Speed and flexibility are inherent characteristics and advantages. But to achieve the maximum efficiency of supply by air, the air-landed method must be used. Unfortunately, air fields are not always available in an objective area; they must be either captured or built, and air strips capable of taking the landing shock of the future cargo airplane are not built quickly or easily. A further disadvantage of the land plane arises from the fact that amphibious operations are characterized usually by having their objectives at tremendous over-water distances from friendly bases. This means simply that the greater the distance from a friendly base to an objective the less will be the payload of the aircraft. In certain instances this distance could be such as to make the use of land planes highly uneconomical and impractical.

THE CARGO CARRYING capabilities of seaplanes, present and future, are roughly comparable to those given for land planes. They, too, can be employed in either parachute dropping or air-landing supplies. A disadvantage in using seaplanes to air-land supplies is that they are extremely difficult to unload in the water and, once unloaded, the supplies must still be transported by small craft to the beach and then to inland dumps. The obvious advantage in using seaplanes is that landing fields need not be captured or built. All that is required is a relatively calm stretch of water.

A further advantage, and one which is considered of paramount importance, is that, contrary to the limitations of the land plane, the maximum cargo capacity of a seaplane can be exploited. This could be achieved in the following manner. Instead of having our base of supplies at the nearest friendly base, which might very well be 2,000 or more miles from the objective, we could establish floating supply bases in the form of large seaplane tenders.

These tenders would be capable not only of refueling and performing required maintenance of seaplanes, but of carrying, in considerable quantities, pre-packaged items of Classes I, III, and V, and other supplies as might initially be required by the landing force. The pre-determined rendezvous point for seaplane and tender could be from 50 to 250 miles from objective. The seaplane would land near the tender, be hoisted to the deck where it would be loaded by personnel of air delivery platoons embarked on the tender with either scheduled or requested supplies, be lowered over the side and then take off for the objective.

Upon reaching the designated drop zone the supplies could be parachuted out in accordance with previous plans, or could be air-landed if conditions were favorable.

The third group of aircraft to be considered, and the one which the author feels to have the greatest possibilities, is that of the helicopter. Though the range and payload of the present day helicopter do not begin to approach those of proposed conventional aircraft, there is no scientific or manufacturing deterrent to increasing the size and capabilities of helicopters. Actually, for aerial resupply during amphibious operations, a tremendous increase in payload is unnecessary and present day range is definitely adequate. With the helicopter we can obtain the desired dispersion of off-shore shipping, we can reduce the amount of shipping being unloaded at the beach, we can simplify the work of the shore party, we can eliminate the necessity of parachute drop, and we can spot our supplies exactly where we want them with a minimum of effort. In addition, we will have the perfect means for evacuation of wounded directly from the battlefield to hospital ships. How can we achieve these much desired results? By utilizing the helicopter, in combination with other means, in the manner described below.

The landing force will be embarked on landing ships similar to present day types but having much improved characteristics of size, speed, and troop accommodations. The supplies with the assault will be a minimum—on the order of four days of rations and three units of fire. The bulk of these supplies will be mobile loaded on motor vehicles organic to the landing force. Loaded thus, it is entirely possible and practical to have all assault shipping unloaded and away from the objective area in a matter of hours. The only ships remaining:

in the immediate vicinity would be combatant vessels of the support group.

Dispersed over a wide area some 50 or more miles seaward of the beach would be a floating supply base composed of either AKAs with helicopter flight decks, or of escort carriers, or both. These ships would carry, say, 25 days of pre-packaged items of Classes I through IV and four to seven units of fire for the landing force. Aboard these ships would be their complement of helicopters which, starting the afternoon of D-day, would begin ferrying designated supplies to specific beaches in accordance with landing force plans for the build-up of supplies, and in response to emergency requests for particular items. The route between ship and beach and the landing zone for helicopters would be controlled by logistical control groups. These control groups would be comparable to those evolved during the last war, would perform similar functions, and might conceivably be airborne rather than be stationed aboard control vessels. Organic radio equipment in the helicopters would provide the means for necessary control of the movement to the beach.

PERSONNEL of air delivery platoons, embarked aboard the carriers, would be responsible for loading the helicopters. On the other end unloading would be the responsibility of the shore party who would be operating at both an air-head and a beachhead. Supplies would normally be carried in the fuselage of the helicopter. In unusual circumstances where either the size or shape of certain supplies or equipment prevent their being carried within the helicopter, it is entirely feasible to have such items suspended from the underside of the helicopter. By means of a winch mechanism the helicopter, while hovering over the exact spot indicated by shore party personnel, could lower the container to the ground and release itself. Regardless of how the supplies were carried, the shore party would be responsible for unloading and placing them in initial dumps. The shore party would also establish an evacuation station within its air-head from which personnel casualties would be evacuated by helicopter to hospital ships off-shore on the return trip of the helicopter.

Imagine the satisfaction of the shore party commander who could, to a great extent, forget about beached boats, unloading in surf, and impossibly congested beaches. Imagine the satisfaction of the G-4 who could plan on building up his supply dumps inland initially rather than first on the beach and then inland when and if transportation became available. Imagine the satisfaction of the infantry unit commander who, after requesting emergency supplies, sees them delivered in a matter of minutes exactly where he wants them. All of this may be made possible by the nature of the helicopter.

It is definitely reasonable to assume that such a method

of supply could keep up with the immediate needs of the landing force and establish a comfortable margin of reserve. Actually such a system would be comparable to the present day concept of the logistical phase of the ship-to-shore movement. The principles are the same, the only difference being in the application of techniques.

The helicopter takes the place of the LCVP and similar landing craft. The supplies are still loaded and brought to the objective in surface shipping, but with the helicopter it becomes a simple matter to disperse the shipping at a sufficient distance off-shore to minimize the danger of hostile attack with atomic weapons. Additionally, the helicopter has the capability of avoiding or circumventing trouble spots ashore such as unsilenced hostile anti-aircraft weapons. It is visualized that by the time helicopters had completed unloading of shipping, air strips suitable for the landing of heavy cargo planes would have been captured or built, and the base itself relatively secure from hostile air attack. At such time the build-up of supplies to required base levels would be continued by employing either land or sea planes of the 100,000 pounds payload class, and by the use of landing ships for vehicles such as tanks, for heavy engineering equipment needed for the development of the base, and for other types of supplies not readily air-transportable.

Thus far a rather beautiful case has been built up for the supply role of aircraft in future amphibious operations. Unfortunately for those seeking a single solution to the problem posed by the advent of atomic warfare, the use of aircraft is not the final and complete answer. In the first place, to support altogether by air the amphibious operations of the next war, a war which in all probability will be global in nature, would require thousands of huge cargo aircraft. To construct these aircraft would play a tremendous strain on the strategic materials available to the nation. The need for fighter and bomber aircraft could well outweigh the requirements for logistic aircraft and thus divert scarce materials needed in the construction of the latter. In the second place, assuming that sufficient cargo planes were available, their employment must be tempered with the realization that some supplies and the vast majority of heavy equipment will and must be brought in by surface shipping. For example, the repair of captured airfields or the construction of new airfields required by friendly land based combatant aircraft will call for the early landing of a considerable amount of heavy engineering equipment. Where a field does not already exist it will of course be impossible to bring in by air such equipment. Assuming an airfield was available it is still believed impractical to transport such equipment by air. The logical solution here is to use landing ships which can beach, discharge their cargo, and depart in a matter of hours.

USMC



COASTWATCHERS

By LtCol Robert C. Burns

✿ AMONG THE UNSUNG HEROES OF THE WAR IN THE Pacific were the coastwatchers. Surrounded by none of the cloak and dagger atmosphere which characterized their better known counterparts in other theatres of war, they lived—and sometimes died—in anonymity. Theirs was a solitary struggle against man and nature as they filtered through Japanese lines and island jungles in their search for information of the enemy. From Guadalcanal to Luzon they played their vital role in production of the intelligence essential to the success of Allied operations.

One of the lessons brought home to Australia by

World War I was the necessity of establishing for intelligence purposes a line of observation posts along her sparsely settled northern and western coasts and in the island screen to the northeast. Accordingly, in 1919 a system of coastwatchers was set up in those areas and an intelligence network inaugurated which by 1942 covered an area of over 500,000 square miles.

The original coastwatchers were government officials, aided by missionaries and planters. At the beginning of World War II in September 1939, coastwatcher personnel totaled 800, most of whom were on the Australian coasts. With the possibility of action approaching, these

watchers were placed under control of the intelligence section of the Royal Australian Navy; to coordinate their efforts naval intelligence officers were stationed at Port Moresby, Thursday Island, Rabaul, Tulagi, and Vila. With the entrance of Japan into the war and the subsequent Japanese occupation of the Solomons and the Bismarck Archipelago, it was necessary to take steps to alter the civilian status of the coastwatchers, who would become mere spies as the invasion rolled over them. Therefore, those who wished to continue their hazardous occupation were taken into the Australian armed forces and their ranks were strengthened by the addition of Army and Navy officers.

✿ IN MARCH 1942, after Gen MacArthur assumed supreme command in the Southwest Pacific, the coastwatcher system was removed from the jurisdiction of the Royal Australian Navy and placed under the Allied Intelligence Bureau (AIB). This Bureau formed an international unit to carry out intelligence activities within the enemy lines, its agents and funds for its operation being drawn from the several nations represented in Gen MacArthur's command. As such it continued to operate in the Southwest Pacific until the close of the war.

The original Australian coastwatcher system depended upon the communications system of the General Post Office. In September 1939 it was realized that such communications did not offer sufficient flexibility, so the government issued portable radios to the coastwatchers in isolated situations. The portability of these sets, however, was rather academic inasmuch as it required 16 men to move one of them. Smaller and more convenient radios were later developed and by December 1942, 64 radio-equipped coastwatcher stations were in operation in the Australian coastal and island areas. Each of these radios was equipped with a crystal cut to a special frequency designated as "X." Stations located in Port Moresby, Thursday Island, Rabaul, and Tulagi maintained a 24-hour watch on "X" frequency.

Supply of the more isolated coastwatcher stations was always difficult. In the early days of the war and before the Japanese occupation of the islands, they were supplied by *Paluma*, a 66-foot naval craft normally stationed at Thursday Island. In view of the obvious unsuitability of *Paluma* for operations within the Japanese-occupied areas, coastwatchers turned to aircraft for supply. The first of many parachute drops was made on the southern coast of New Ireland by a Hudson bomber in May, 1942. It soon became apparent that supply by air had its limitations, principally because of the hazards of parachute drops and the danger of attracting enemy attention.

As United States submarines commenced operations in the Southwest Pacific, it was felt that they offered the best solution to a difficult logistical problem, combining

as they did large cargo capacity and secrecy of movement. The first such submarine mission in support of the coastwatcher system was carried out by *S-24* on the night of 12-13 July, 1942, a coastwatcher being landed at Adler Bay in New Britain. Thereafter submarines were the principal means of transportation, supply, and evacuation for the coastwatchers operating within the enemy lines. A pattern of mass evacuation was set on the last day of 1942 when *Nautilus*, in response to an SOS from the coastwatcher on Bougainville, surfaced in Teop Harbor and took aboard 29 priests, nuns, and planters who were fleeing from the Japanese. Again on 28 March 1943, *Gato* rescued 51 assorted men, women and children from the same spot and, during the last week of July, *Guardfish* brought out a record-breaking 60 evacuees in one trip and 22 in another as enemy pressure on Bougainville increased and temporarily put the coastwatcher system out of operation.

✿ THE FIRST COASTWATCHER operations of World War II took place in December 1940, when a German sea raider landed prisoners on Emirau. Thereafter ensued a lull until the war began in earnest in the Pacific in December 1941. As the first Japanese raid headed for Port Moresby, the coastwatcher at Gasmata in New Britain spotted the enemy planes in time to give ample warning at the target area. However this excellent piece of work had an unfortunate aftermath as the news was broadcast in Australia that the raiders had first been sighted over Gasmata. Shortly thereafter the coastwatcher was eliminated by enemy action.

Early Japanese operations sadly disrupted the coastwatcher system throughout the islands, except in the Solomons. In anticipation of enemy occupation of those islands, initial posts had been established at Porapora on Buka, overlooking Buka Passage, and in southern Bougainville on Malabita Hill which surveyed the Shortland Islands and the entire Buin-Faisi area, soon to become an important Japanese fleet anchorage. Coastwatchers were also firmly established on Tulagi, Guadalcanal, and Malaita, a coordinating station being set up on Malaita to receive reports from the other stations and forward them to Vila. It was only 10 days after the enemy occupied Tulagi that one of the coastwatchers on Guadalcanal rescued the crew of a downed American plane, the first of many such rescues which were to be effected. Coastwatchers gave complete coverage to the Japanese activities at Tulagi and thus were vital to the success of early American air operations in that area.

Prior to the landing on Guadalcanal by the 1st Marine Division, intelligence officers from that unit visited headquarters of the coastwatcher system, then located at Townsville, Australia, and obtained up-to-the-minute information, including location of enemy installations and troop strengths, on the objective area. As retaliatory

enemy air raids began on the Marine beachhead, the coastwatcher at Porapora on Buka, athwart the air route from Kavieng, and his comrade in the Buin-Faisi area, athwart the route from Rabaul, were able to give early warning of each attack. The coastwatcher on Guadalcanal, Lt D. S. Macfarlan, RAN, from his observation post on Gold Ridge, gave blow-by-blow descriptions as the attacks struck home. Thereafter the stations on Buka and Bougainville, by counting the return flights, were able to check on enemy losses. As the Japanese prepared to mount their counterattack on Guadalcanal, great activity was centered about the fleet anchorage and the air fields in the Buin-Faisi area, all of which were reported in detail by the coastwatcher from his perch on Malabita Hill. Equipped with a copy of Jane's *Fighting Ships*, he was able to give accurate identification of all naval units in the area.

As Guadalcanal was secured and the American advance northward began, coastwatchers were introduced into Choiseul, Vella Lavella, Segi, Rendova, Rekata Bay (Santa Isabel), and Kolombangara. From the stations on Choiseul and Vella Lavella, movements of the "Tokyo Express" were spotted. From Rendova sur-

When the Japanese struck at the Philippines, there was no prepared intelligence network similar to that provided for Australia by its coastwatcher system. However, it was not long before the flow of vital information to Allied forces commenced as a guerrilla movement got under way. The intelligence network subsequently developed and maintained throughout the war in the Philippines was based upon and inextricably bound to the guerrilla movement, which within itself provided much information and worked in close collaboration with Americans behind the enemy lines.

THE GUERRILLA MOVEMENT arose spontaneously throughout the Philippine Islands as soon as the Japanese occupation was completed, and it maintained effective limited operations against the enemy until American forces returned to the islands. Despite weaknesses caused by irresponsible and selfish leadership on some occasions, a sufficient number of strong men arose within the guerrilla forces to direct them to the successful attainment of their objectives.

At peak strength, active guerrillas numbered approximately 200,000; possibly a million more supported the

When the Japanese struck at the Philippines, there was no prepared intelligence network similar to that provided for Australia by its coastwatcher system. However, it was not long before the guerrilla movement got underway and provided the needed flow of information to the Allied forces

veillance of the Munda airfield was maintained. It was the coastwatcher on Vella Lavella who rescued 116 survivors of the *USS Helena* in July of 1943.

As a result of these operations, by the spring of 1943 the Solomons were thoroughly covered by the coastwatcher system. When enemy aircraft took off from the Buin-Faisi area, their departure was immediately broadcast. Thereafter they were reported from Choiseul or Vella Lavella, then from Kolombangara or Rendova, next from Segi, and finally from the Russells just before radar picked them up off Guadalcanal. In the same way surface craft were reported as they headed to the south to become targets for American planes.

Although not so spectacular, coastwatchers played their role in New Guinea and New Britain. After the Allied envelopment of Buna, the Japanese attempted to establish a beachhead for counterattack at the mouth of the Mambare River, 40 miles to the northwest. Fortunately a coastwatcher was located at that point. His report brought an air attack which effectively discouraged the enemy attempt at landing. Particularly effective was the observer at Cape Orford in New Britain, who supplied Allied airmen with daily reports of barges and surfaced submarines which passed his position regularly on supply runs.

movement or were part time guerrillas. "The guerrilla is the people themselves," wrote 1stLt (now LtCol) Jack Hawkins, USMC, formerly of the Fourth Marines and later a guerrilla officer following his escape from Japanese captivity.

Outstanding among the guerrilla forces were those in the island of Mindanao where an American officer, Col W. W. Fertig of the Corps of Engineers Reserve, exercised command over the entire island. In addition to a number of other Americans in his forces were three Marine Corps officers who had escaped from the Japanese prison camp at Davao. In addition to Lt Hawkins who served as G-2 of Fertig's forces, Capt (now LtCol) Austin C. Shofner, USMC, was G-3 and 1stLt (now LtCol) Michiel Dobervich, USMC, was chief liaison officer. These officers were subsequently evacuated to the United States in November 1943. Due to the activities of the Mindanao guerrillas, the Japanese were able to control only the coastal cities of Davao, Zamboanga, Cagayan, Cotabato, and Surigao, besides patrolling the highways and coast. The remainder of the island was under guerrilla control which supported a complete civil administration.

It was some time before detailed reports on the situation on Mindanao reached American headquarters in

Australia. However, in November 1942 regular radio communication had been established and in March 1943 a United States submarine made its way to Tukuran with supplies and instructions from Gen MacArthur. A passenger aboard the submarine was LtCmdr Charles Parsons, USNR, who was subsequently to play a major part in the organization and operation of an intelligence network throughout the islands. Cmdr Parsons was particularly qualified for his assignment inasmuch as he had spent the previous 20 years in the Philippines where his ventures and adventures had taken him to many out of the way places and had given him wide contacts with the native population. On this occasion he remained nine months in Mindanao before returning to Australia by submarine; later he made a number of trips into the area by the same means despite a price of 5,000 pesos which the Japanese had set upon his head. Through the loyal cooperation of the guerrillas he was enabled to travel almost at will throughout the islands at any time during the war.

☛ ON THE ISLAND OF PANAY LtCol Macario Peralta controlled the guerrilla movement with a firm hand from the start and eventually commanded a force of approximately 23,000 people. Within a year after the Japanese occupation, Peralta had established radio contact with Gen MacArthur's headquarters and had contained the enemy forces in the towns of San Jose, Capiz, and Iloilo. He eventually added the Romblons and Guimaras to his command.

The original leader of the guerrillas in Negros was Maj Jesus A. Villamor, a Filipino member of the Army Air Corps. He was succeeded in 1943 by LtCol Salvador Abcede who rapidly developed one of the most efficient and effective guerrilla forces in the islands.

LtCol James M. Cushing emerged as strong man on Cebu after a period of internecine strife with other would-be leaders. He eventually exercised command over 8,000 men and was credited with killing more Japanese than any other guerrilla chieftain.

Col Ruperto Kangleon, a veteran officer of the Philippine Constabulary, rose to command of the guerrilla forces on the island of Leyte. He worked in close harmony with Peralta on Panay and Fertig on Mindanao and was able to furnish valuable assistance to Gen MacArthur's forces when they landed on Leyte.

The Japanese had little interest in the island of Samar. Consequently there was no guerrilla movement worthy of note there. However LtCol Charles M. Smith, USA, was sent to the island by submarine in September 1944 and soon organized a force of 8-9,000 men. The leader of the guerrillas on Bohol was Maj Ishmael Ingeniero of the Philippine Army. Here again Japanese occupation forces were contained in the larger coastal towns of the island. The remainder of the area remained

virtually free of enemy control.

On Luzon stronger Japanese forces, enjoying the mobility provided by a complete road net, were able to counter the guerrilla movement far more effectively than elsewhere. Here the resistance centered largely at the start around Americans who had taken to the hills when Bataan and Corregidor surrendered. Many of these were eventually captured or killed by the Japanese, although LtCol Russell W. Volckmann of the 31st Infantry was able to maintain control over an underground movement in that portion of the island north of the Lingayen Plain. In central and southern Luzon the situation was constantly in a state of flux because of the activity of a number of individual bands led by jealous rivals. These bands operated under such quaint names as Old Timers, Celestial Division, Hot Spot Unit, Up Again Regiment, Joe's Boys, The Lost Battalion, The Saints Regiment, Eden Kinds Reformed Scholars-in-the-Feld, the Ladies Corps, the Porch Club and the Honorable W. Q. Vinson's Travelling Guerrillas of the Philippines. The more effective of these ineffectual groups were Anderson's Guerrillas, led by an American officer, the Markings, and the Hunters, also known as the ROTC Juniors. Noteworthy among these bands were the Hukbalajaps, commonly known as the Huks, a communistic organization whose primary objective was the establishment of communism in the Philippines. To attain this end they fought equally against Americans and Japanese.

☛ FORTUNATELY for all concerned, the guerrillas in the Philippines were able to obtain radio sets of sufficient strength to establish communications with Australia. United States forces at first were suspicious of these messages from the enemy-held islands, but as soon as their authenticity was established a two-way exchange of information was commenced. In general each of the island guerrilla leaders operated one central station for communication with the outside, transmitting the reports received from isolated detachments. The coastwatchers were dependent upon patched up or home-made radio sets or, in many cases, courier. Additional communication equipment was one of the first items of supply to be sent in by submarine to the guerrilla forces. In the fall of 1943, the U. S. 7th Fleet sent a naval radio set and operators into Mindanao. From that point coastwatcher sightings were received and relayed to Darwin, Australia, whence they were sent to the 7th Fleet Headquarters and to Task Force 71, whose submarines operated from Perth. Thus it was possible for coastwatcher sightings in Philippine waters to be sent to Australia and passed on to submarines on patrol within a matter of an hour or two. Previous to leaving Australia, the Mindanao navy radio unit was instructed to send the word "Christmas" in the event enemy operations jeopardized its operations and it became necessary to destroy

codes and equipment. It was on 23 December 1943 that "Christmas" was flashed to 7th Fleet Headquarters. Hopes that this message was merely a seasonal greeting were soon dissipated as silence ensued. It was later learned that the Japanese had fixed location of the station and it was necessary to evacuate it before an oncoming patrol. However all personnel escaped and another unit was soon established in the island.

When the strength of the guerrilla movement was known to the Commander-in-Chief of the Southwest Pacific Area, it was immediately decided to support it to the greatest extent possible and to exploit it by maintaining pressure against the invaders and obtaining information of their movements. The means of providing logistical support posed a serious problem. Air transport was out of the question because of large distances involved. Thus it was realized that submarines provided the only feasible solution to the problem. However, at that time the few U.S. submarines operating in the Pacific were busily engaged on tasks of destruction against Japanese shipping and the Navy was extremely loath to divert them from their primary missions. A satisfactory compromise was eventually worked out, some submarines being diverted from war patrols to carry out specific missions in the Philippines while others were assigned to regular supply runs.

THE FIRST supply mission was carried out on 14 January 1943 when *Gudgeon* successfully landed six men and 2,000 pounds of equipment on Negros. During the next six months, small parties of personnel with approximately two tons of stores each were landed at various points in Mindanao and the Visayans by various submarines during their regular war patrols.

As requirements of the coastwatchers and guerrillas increased to amounts which could not be handled by submarines incidental to their normal war patrols, a special logistical force was organized in October 1943, with *Narwhal*, *Nautilus*, *Seawolf* and *Stingray* as components, its primary mission being supply and evacuation for the Philippines.

From January 1943 to October 1944, a total of 18 submarines carried out 39 supply and evacuation missions in the Philippines, 1325 tons of supplies being delivered to friendly hands. Less than 50 tons were lost or not delivered. No missions were completely unsuccessful and only three were partially so. Three hundred twenty-seven persons were landed during these operations, and 466 were evacuated.

A great amount of detailed planning was essential to each submarine mission to the Philippines. First a suitable rendezvous point would be recommended by the guerrilla leader of the island concerned who would also set up a system of security signals to be used at the appropriate time. Following a study of the hydrographic

charts of the area concerned, the submarine task force commander would either accept or reject the suggested location. Time of making the rendezvous was also calculated according to the phase of the moon, and dusk and dawn in such a manner that the submarine would have sufficient time to unload its cargo and submerge before daybreak.

EXTREME COOPERATION from the guerrillas was necessary for efficient unloading under cover of darkness. This was generally achieved, Cmdr J. C. Titus, USN, of *Narwhal* having stated that Abcede's men on Negros could unload 45 tons in 45 minutes, supplies then being taken ashore in native craft. However such efficient long-shoremen were not always available. On one occasion, after a submarine had surfaced and a group of some 50 natives had come aboard, one of the ship's officers instructed them to follow him, went down the forward hatch, picked up a box of .30 caliber ammunition, and climbed up the after hatch to the deck. Thereupon he discovered that each of the Filipinos had followed, but not one had a box of ammunition in his arms. On another occasion unloading was so dilatory that, despite several stern warnings from the commander of the submarine, the natives had failed to clear the deck at the approach of dawn and it was necessary to submerge with Filipinos still on the deck of the submarine.

Seawolf was the only submarine of the special logistical force to be lost on a mission and her loss did not occur incident to compromise of a rendezvous. However there were numerous narrow escapes. In July 1943 a submarine scheduled to evacuate Cmdr Melvin McCoy, USN, and Maj Samuel Mellnik, USA, who had escaped from the Japanese, was warned at the last minute of Japanese interest in the rendezvous in southern Mindanao and was successful in steering clear. The evacuation was successfully completed several days later off the island of Olutanga.

On another occasion *Narwhal*, after delivering 70 tons of supplies to Col Fertig's forces in Mindanao and taking aboard 28 evacuees, surfaced off Tawitawi in the Sulu Archipelago early one morning in March 1944 to unload a small amount of supplies for a coastwatcher in that area. As unloading was proceeding, radar contact was made with a vessel at 8,500 yards nearly dead ahead. Suddenly two more vessels, apparently destroyers, loomed into sight in the brilliant moonlight. The nearest vessel approached to nearly 3,100 yards, turned broadside-to, and opened fire. *Narwhal* crashdived immediately with two natives of the unloading detail still aboard and despite a severe depth charging was able to clear the area safely. On 26 September 1944 *Nautilus* had a close call while carrying out a supply mission off Cebu, when she grounded on a shoal. After much maneuvering and jettisoning all movable gear and supplies, she was even-

tually able to back clear just before daybreak, her mission successfully completed.

Incidental to such supply missions submarines also carried out a number of evacuations of American refugees from the Japanese. One such was that performed by *Angler* who had been directed to rescue 20 United States citizens from a rendezvous on the north coast of Panay. Upon surfacing at the appointed time and place, the *Angler's* captain found that the number of refugees had increased to 58 men, women (one pregnant) and children. He took them all aboard without hesitation despite the distance involved and set forth on a 12-day voyage to Darwin, Australia. A similar mission was performed by *Crevalle* who evacuated 47 persons, including 28 women and children from Negros. On 30 September 1944 *Narwhal* rendezvoused at Sindangan Bay, Mindanao to take aboard 81 American prisoners of war who had been aboard the *Shinyo Maru* which had been torpedoed by *USS Paddle* enroute from Davao to Manila. These Americans were landed in safety at Hollandia, New Guinea. Not so fortunate was the U. S. Army sergeant, member of Peralta's guerrillas on Panay, who, suffering from chronic appendicitis, was evacuated by *Grayling* on 23 August 1943. *Grayling* was never again sighted by friendly forces and was presumed lost by enemy action in Tablas Strait.

All of the principal guerrilla leaders in the Philippines seemed to have an excellent understanding of the value of intelligence and as a result an efficient and effective organization for obtaining information of enemy forces came into being and expanded as the resistance movement grew. Col Fertig's forces on Mindanao, staffed as they were by numerous Americans, were able to furnish United States forces with a vast amount of information from that island, which had been selected originally as the target area for the first American landings. For example Fertig supplied Gen MacArthur's Headquarters with detailed information of the defenses of Davao and other coastal areas as well as keeping a continuous check on ship movements through such vital waters as Surigao Strait and Basilan Strait.

FROM PANAY, LtCol Peralta extended his intelligence network to Masbate, Marinduque, and smaller islands in the vicinity which sent in reports by regularly scheduled courier trips. From these and other sources, he was able to produce detailed and voluminous reports of enemy movements, troop strengths and installations. Maj Villamor set up an elaborate intelligence system on Negros, which was later developed to great effectiveness by LtCol Abcede. In adjacent Cebu, LtCol Cushing transmitted periodic intelligence reports in which he gave valuable information on the activities of the Japanese who had posed the most important elements of their Visayan forces on that island. Col Kangleon received the Distinguished

Service Medal from Gen MacArthur for his work as leader of guerrilla forces on Leyte, outstanding in his performance being the furnishing of detailed intelligence which contributed greatly to the success of the initial American landings in the Philippines. Typical of his reports was a complete and accurate chart of Japanese mines in the Surigao Strait area.

Maj Ingeniero maintained an efficient coastwatching system from the south coast of Bohol, covering movements through the Mindanao Sea. From vantage points on the northwestern tip of Samar, agents of LtCol Smith were able to obtain good coverage of San Bernardino Strait in the latter stages of the war.

INTELLIGENCE ACTIVITIES in northern Luzon centered about LtCol Volekmann to whom information was sent by runner for relay by radio to Australia. Volekmann supplied American forces with accurate summaries of enemy strength and activities and furnished daily reports on enemy shipping movements in the San Fernando area. The confused guerrilla situation in central Luzon prevented organization of an effective intelligence network, although some valuable information was received nevertheless, principally from the Markings, the Hunters and Anderson's Guerrillas.

In order to obtain prompt information of enemy shipping and produce lucrative targets for its submarines, the 7th Fleet in cooperation with the various guerrilla leaders was able to establish coastwatcher coverage of the seven major passages to and from the interior waters of the Philippine Archipelago, namely, San Bernardino Strait, Surigao Strait, Basilan Strait, Sibutu Passage, Balabac Strait, Mindoro Strait and Verde Island Passage. Sightings from these areas were passed via 7th Fleet without delay to submarines in adjacent waters and it was normal to receive a follow up message from the coastwatcher during submarine attack on targets which he had reported a few hours previously.

In the summer of 1944, the coastwatcher who was covering Sibutu Passage from an observation post on Tawitawi reported enemy survey activities in previously deserted Bongao Bay. This was correctly interpreted as indicative of the enemy's intention to establish a fleet anchorage there. The same coastwatcher later was able to furnish United States forces with a daily report on the presence and movement of Japanese naval vessels when the Imperial Fleet moved important elements from Singapore to that anchorage. Similar activities in Iloilo Strait were reported by Panay intelligence agents in the early fall of 1944, but the Japanese fleet was so shattered in the engagements attendant on the Leyte landings that this anchorage was never used to shelter the Mikado's warships.

The effectiveness of the guerrilla intelligence and coast watcher system in the Philippines was attested to by the

Japanese themselves in an intelligence report of the 14th Army Group of 2 June 1944, which stated in part, "The bandit groups . . . are directing most of their efforts toward reconnaissance of our forces. . . . Enemy wireless communications within the islands is more and more active. Information on our forces and on the Philippine government is being transmitted to America and to Australia. New stations keep appearing; they continuously infiltrate into Luzon."

The Philippine coastwatchers served the American forces well in other ways besides reporting enemy information. As the carrier forces of the 5th Fleet struck at the islands in invasion preliminaries in the fall of 1944, many downed airmen were rescued and returned to their own forces. It was not unusual for the 5th Fleet to receive via the 7th Fleet a report from a guerrilla organization that one or more of its airmen were safe in friendly hands after the loss of a plane, all within a maximum of 24 hours from takeoff.

☛ ON 18 AUGUST 1944 the submarine *Gunnel* was forced to crash-dive during a surface action off Marinduque Island and while so doing lost overboard MoMlc R. W. Velle. His loss was reported to the 7th Fleet that night. A few hours later a report was received from LtCol Peralta stating that his agents on Marinduque had rescued Velle and that he was en route to Panay. He was subsequently evacuated from that island in December 1944.

There were only eight survivors when the submarine *Flier* struck a mine in Balabac Strait in mid-August of 1944, but those eight were fortunate enough to contact the coastwatcher detachment on the island of Palawan, whose duty it was to report movements through the strait. Dispatches to the 7th Fleet brought *Redfin* to the rescue and on 30 August the *Flier* survivors were successfully evacuated.

An analysis of the operations of the coastwatcher intelligence system in the Philippines shows that it, like its predecessor in Australian waters, depended for its success upon two sets of factors; one, intangible, and the other, tangible. Foremost among the intangible factors was personnel. Experience showed that coastwatchers, as well as any intelligence agents operating behind enemy lines, in addition to the usual requisites of courage and ability to report what they saw, must also have a thorough knowledge of the area in which their activity is centered and of the characteristics and ways of the indigenous population. A typical example was LtCmdr Parsons, who, perhaps more than any one person, was responsible for the success of intelligence activities in the Philippines. Furthermore, these intelligence agents must operate against the background of a friendly native population. Although comparatively few natives in either the Australian island screen or the Philippines

were pro-Japanese, the rare instances in which this was so seriously hampered the activities of Allied coastwatchers and in some cases led to their capture or death. On the other hand the great success attained by the majority of such intelligence agents would have been impossible without the assistance of friendly natives who, on countless occasions, gave them shelter and protection and warned them of enemy interest in their activities as well as keeping them supplied with a vast amount of detailed information.

The tangible factors come within the fields of communications and logistics. Only by means of reliable radio channels was it possible to provide promptly and regularly submitted reports. Portability was another asset to radio communications, providing as it did the flexibility often required to remain one jump ahead of enemy searching parties. Supply and evacuation were essential to the continued operation and effectiveness of coastwatcher systems. This was always a problem. Airlift was tried and was satisfactory to a limited extent within the range of the aircraft used. The element of secrecy, however, was to a large extent lacking and the hazards were great, both to the aircraft and to the coastwatcher to whom they frequently drew enemy attention. The submarine was the only thoroughly satisfactory means of meeting the logistical problem, providing as it did satisfactory cargo carrying capacity plus secrecy generally of the highest degree. However, it was necessary to compromise between the primary submarine mission of raiding enemy shipping lanes and the special mission of supplying guerrillas and coastwatchers. In effecting this compromise both missions undoubtedly suffered to some extent.

☛ IN CONCLUSION it is apparent that operations of an intelligence network based upon a coastwatcher system can be of great importance to any naval or amphibious operation. As shown specifically in the instances of the Solomons Island and the Philippines, it can mean the difference between operating in an intelligence vacuum and meeting the enemy with plans based on timely and accurate information of his strength and dispositions. Such an intelligence network can successfully overcome the barriers set up by ocean vastness and distance to the shores of a projected beachhead. But it can be effective only in an area whose people are friendly to our cause. It must be staffed with properly qualified personnel who must be provided with adequate signal communications and given adequate logistical support. It can be set up within an area held by the enemy prior to the commencement of hostilities as well as in one which we have been forced to evacuate. In the latter case it is felt that the most effective operations will be insured when they are built into the framework of a coastwatcher system organized prior to the advent of enemy forces. USMC

Passing in Review

BOOKS OF INTEREST TO MARINE READERS

Russian Military Success . . .

SOVIET ARMS AND SOVIET POWER—General Augustin Guillaume, French Army. 212 pages, maps. Washington: The Infantry Journal Press. \$3.50

Many answers have been given to the question of how the Soviet Union was able to rally from crushing defeats in 1941, hold at Leningrad and Moscow, counterattack at Stalingrad, and finally begin an offensive march that ended in Berlin. In the light of early German successes which resulted in the destruction of nearly 50 per cent of Soviet industry and the annihilation of more armies than the United States possessed in 1945, it is obvious that one single answer is not sufficient. In a compact summary based on his study of the Soviet Union while serving as French military attache in Moscow, Gen Guillaume presents the factors of Soviet power with reasoning that Gen Walter B. Smith characterizes as meriting the most careful attention.

In the opening chapters of *Soviet Arms and Soviet Power*, the author details chronologically the events that led up to the invasion of Russia, including the world situation, Hitler's aims, and German strategy. Like Churchill, Guillaume presents a case for Soviet leaders whose major fear in 1938 and 1939 was that they alone would finally have to face the full power of German Panzers. The campaigns of 1941 and 1942 are traced in full, with the Germans everywhere winning battles but nowhere winning victory. After Stalingrad, and the victorious march to Berlin, the author gives his reasons why the Soviet Union was able to defeat Hitler. He ably sums them up as "Unity of doctrine, whether realized in enthusiasm or imposed by power from above—unity of direction in the political, economic, and military domains insured by the strong personality of Stalin . . . with the absolute authority and stability of power insured by dictatorship—amplitude of preparation, industrial and military—application without reservation . . . of the total human and material resources of the country—furious work by a great people under an inflexible discipline—the quality of military cadres insured by vigorous selection—the quality of military units based on strength of manpower and on a carefully sustained morale—and a materiel strength that was constantly improved."

The lessons that Gen Guillaume emphasizes are that

these factors in Soviet power are still present, enhanced by the fact that no power is now in a position to launch an assault on Russia with the speed and force of the Germans, and that the USSR can be defeated only by a superior application of the factors that make up any nation's war potential. It is a lesson that can be profitable. *Soviet Arms and Soviet Power* is a valuable addition to any military library.

Gen Guillaume commanded the famed Moroccan Goums in North Africa and Italy during World War II, and the 3d French Infantry Division in the drive through France and Germany. From 1946-1948 he was the French military attache in Moscow and is now on duty with the French occupation forces in Germany. AA

Atom Threat . . .

FEAR, WAR AND THE BOMB—P. M. S. Blackett, 235 pages. New York: Whittlesey House, McGraw-Hill Book Company. \$3.50

Blackett's book on the atomic bomb, first published in England under the more accurate title of *Military and Political Consequences of Atomic Energy*, has generated heated controversies on both sides of the Atlantic. It combines, within one volume, an objective analysis of the past performance of strategic air power and its capabilities wed to the atomic bomb, with a political interpretation which is openly biased. Blackett's treatment of the military aspects of atomic weapons is stimulating, even if his political diagnosis is more acceptable in Moscow than in Washington or London.

Blackett, one of Britain's foremost physicists, develops his analysis with the detachment of a skilled scientist. The last third of the book describes the efforts that have been made to establish international control over atomic energy. This section necessarily deals with the ideological gulf separating the USSR from the USA and the other nations of the West. Here, Blackett's pro-Soviet bias detracts from the strength of his military analysis. Nevertheless Blackett has made a powerful contribution to the problem of relating the atomic bomb to warfare today. His deductions and his arguments are supported by facts and statements drawn from official, reliable sources.

In a brief resume of World War II Blackett contends

that the Allied air war, first initiated by Britain, was not based on careful calculation of bombing effectiveness but on a failure to produce any alternative strategy. He condemns RAF planning for diverting, initially, so much of limited air resources into preparations "for an ill-conceived an ill-planned" air offense. Blackett criticized the RAF night bombing offensive because it was an attempt to exercise air power "without winning air superiority over enemy territory first." This conclusion needs emphasis at a time when certain strategists again propose doing just that.

Tribute is paid by Blackett to the "decisively important" role played by air power in all the great land battles of the war. However, he believes the allies would have won the war sooner had more of the air effort gone into support of land forces "instead of depending so much on the power of air bombardment alone." The primary cause of the German defeat was the losses "in man power and materiel incurred in the land battles, particularly on the Eastern Front."

Concerning the air contribution to the Japanese defeat Blackett concedes that "this campaign of mass destruction . . . was the first fairly successful one in history. On the other hand, it is quite likely that victory could have been achieved without it."

The introduction of the atomic bomb as the chief weapon of strategic air war has not, in Blackett's opinion, "revolutionized warfare." Blackett makes a careful comparison between the destructive achievements of the atomic bomb and high-explosive air strikes. He agrees that the atomic bomb introduces factors of an entirely new category but these factors have not made success in war dependent upon one or another weapon, but rather upon "the perfection of all arms and their skillful coordination."

To those who argue that the atomic bomb has made valid every claim of air power enthusiasts Blackett recalls how the Germans stood up to a bombing effort "fifty times larger than that which the enthusiasts" once thought necessary. He further observes that "even atomic bombardment could hardly exceed very much the damage inflicted on the Soviet Union by Germany." He dismisses the emphasis that some students place on the horror of atomic war arguing that "from the point of view of most of the individual victims there is not much to choose between the experience of heavy ordinary bombing and atomic bombing." Blackett sees both advantages and disadvantages inherent in telescoping destructive atomic attacks into a short period of time. However, "Only if large armies were ready for immediate invasion would a very short duration attack be advisable."

Space has become more and more prerequisite of a successful air defense—and reciprocal maneuverings for space—so Blackett alleges "constitute the present cold war." The conclusion of his analysis of atomic warfare is

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a warning against acceptance of the popular thesis "that there is no defense against atomic bombs."

At this point Blackett asserts that the atomic bomb will not be decisive in the only possible war now facing the world—one between the United States and Russia. Such a war would be world-wide, would involve all arms and probably of long duration. Both sides are advised against attempting a surprise Sunday punch, for "to strike a heavy but indecisive blow at a powerful enemy, without possessing the resources to follow it up by invasion . . . is to court ultimate disaster." Blackett then tackles the chief American military dilemma—how to shoulder the responsibilities of "a great Power without being prepared to fight overseas with major land forces." America's stock pile of atomic bombs, so Blackett contends—will mean nothing unless backed by "large conventional armed forces." Because of the American political climate, Blackett sees small chance of such forces being created.

But American atomic power by itself can never provide complete security nor can it be an effective deterrent to war. Rather it may offer "an incitement of the rival power to strengthen its position by relatively unprovocative means." This is especially true if that rival power accepts the Blackett thesis that the "longer America waits, the weaker her *relative* power position in the world will become."

Blackett's affection for the Kremlin's side of the current crisis appears throughout his analysis. At one place Blackett remarks that Allied bombing attacks from Britain could be stopped if "the British people themselves" take steps to stop them. At another place Blackett wishfully asserts that the greater the threat of a real war the more the people of Western Europe will withdraw from the struggle.

Despite his bias Blackett offers a convincing criticism of those bombing enthusiasts who have convinced themselves that military security can be built around the invincibility of a single weapon. He indicates that the major fallacy of their view is to neglect the possible enemy reaction to a rigid strategy. Blackett has given the West a sympathetic presentation of possible Soviet reaction to the popularized concept of atomic warfare. His explanations as to why "the Russians have committed the unforgivable sin of not being as frightened of atomic bombs as the Americans" warrants the study of responsible Americans.

WRK

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ONCE UPON A TIME THERE WERE TWO GREAT nations who were all-powerful in the civilized world. Now, these two nations did not attain their enviable position of world prominence by merely wanting to be great. For you see, a short time before there had been three great nations. The first of these great nations decided that three leading countries was one too many, and after making that decision this particular nation took positive action to reduce the number. While she was not completely successful in dominating the other nation, her course of action resulted in the elimination of that particular nation from a position of importance.

Of these two still powerful nations much might be said in the way of comparison. However, the basic difference was that the aforementioned nation had achieved her eminence by conquest and enforced servitude of the weaker nations. The other powerful nation, while not necessarily a weakling in this matter of war expansion, had built her standing mainly on commerce and industry.

The normal course of events, foreseeable to all but the less warlike nation, soon came to pass. A tremendous armada, powerfully protected by the latest ships of the line, including some of the finest assault infantry in the world, set forth to conquer. These elite troops were well trained, well equipped and led by the best generals in the land.

The temper of the less-warlike country reflected itself in the growing tension and uneasiness in the senate gallery. Obvious to repeated warnings from the floor, accompanied by hearty and repeated use of the gavel, the people grew restless. Finally, while order was being slowly restored, a long awaited statesman strode across the raised platform, quickly shook hands with the presiding officer, and stepped forward to the edge of the speaker's dais.

Like the practiced and polished statesman that he was, he awaited for their full attention, and then he began. His carefully modulated but penetrating voice carried to the farthest listener. He told them to dismiss with scorn the visionary terrors which a set of designing men among them strove to excite, in order to attain power for themselves. He paused, while the small group of senators who had agitated for increased appropriations for national defense, glowered with ill-repressed anger.

"Even if the enemies were to come," he continued, "so distant from their resources, and opposed to such a power as ours, their destruction would be easy and inevitable." The crowded gallery broke out into loud and vociferous applause. "Their ships," he added, "will be sore pressed to reach our shores, carrying so large a supply of stores as is needed. It is unthinkable then, to expect them to be able to carry a sufficiently large army to cope with such a large population as ours." He continued by pointing out the self-evident fact that even if the enemy did effect a landing, they would lack fortified bases from which to commence the land operations. He thundered on, "In fact, even if they reach our shores, I do not believe they would be able to effect a disembarkation." He paused to sip from a glass of water conveniently placed on the lectern. The volume of applause that had greeted his last statement slowly subsided as he stepped forward again.

"Let us, therefore, set a-naught these reports as altogether of home manufacture; and be sure that if any enemy *does* come, the state will know how to defend itself in a manner worthy of the national honor."

However much the speech pleased the assembled multitude, it was not sufficient to stop the amphibious landing; it was not enough to prevent the disembarkation; it was not enough to prevent the enemy army, far though it was from its base of supplies, from the projected conquest. Although immediate collapse of the country seemed inevitable, diffident leadership brought about by conflict in the high echelon among the invaders, soon caused the invasion to slow down and come to a halt. Ironically enough, the presence of a brilliant general from a nation previously defeated by the invaders, plus reinforcements from some of the weaker nations, soon caused the tide of victory to flow to the oppressed nation.

The two nations that were involved in this struggle were Athens and Syracuse, though it hardly seems necessary to so identify them. The brilliant general whose leadership saved Syracuse from the Athenian invaders came from Sparta. And the account of the orator is preserved for us in the writings of Thucydides, an able historian of that period.

RLV